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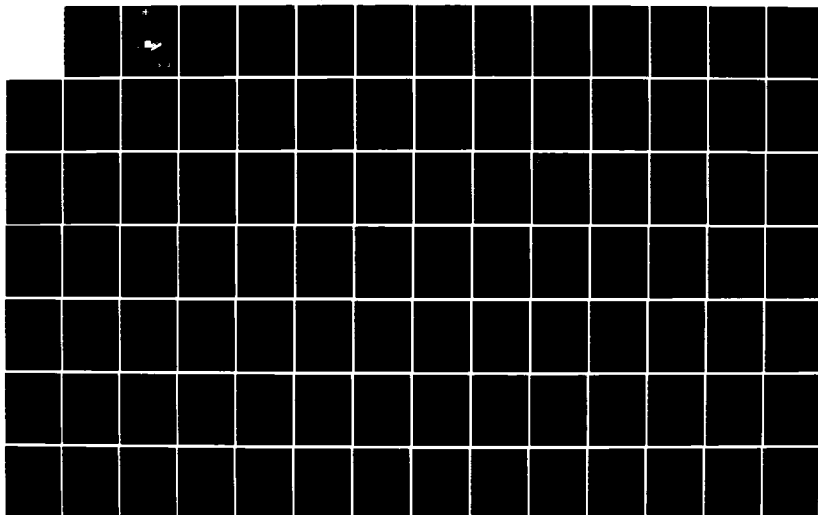
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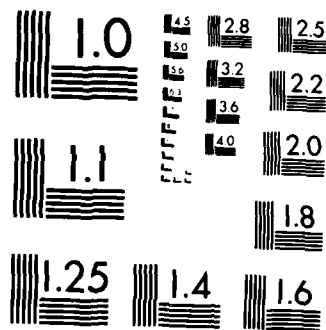
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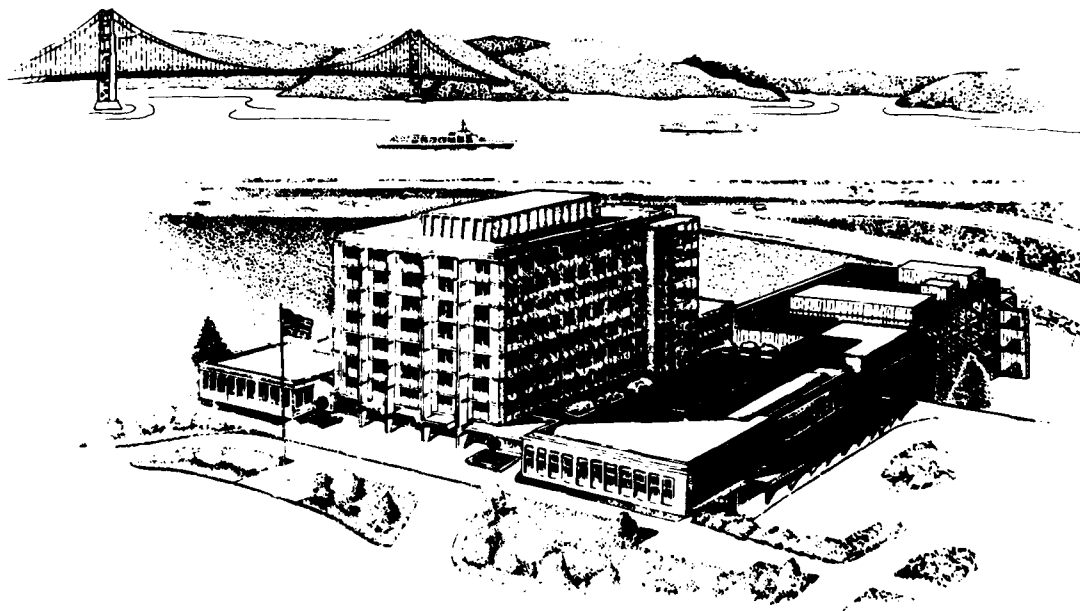
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1985 AMEDD CLINICAL PSYCHOLOGY SHORT COURSE



4-8 March 1985

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PROCEEDINGS OF THE 1985 AMEDD CLINICAL PSYCHOLOGY SHORT COURSE

PSYCHOLOGY SERVICE
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4 - 8 March 1985



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Letterman Army Medical Center
1985 AMEDD Clinical Psychology Short Course

4-8 March, 1985

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER	
AD-A153731			
4. TITLE (and Subtitle) Proceedings: 1985 AMEDD Clinical Psychology Short Course		5. TYPE OF REPORT & PERIOD COVERED Final Report - March 1985	
		6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) CPT Nancy K. Willcockson, PhD (Editor)		8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Psychology Service Letterman Army Medical Center Presidio of San Francisco, CA 94129-6700		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS Psychology Service Letterman Army Medical Center Presidio of San Francisco, CA 94129-6700		12. REPORT DATE March 1985	
		13. NUMBER OF PAGES 382	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified	
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; unlimited distribution			
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from 1 report)			
18. SUPPLEMENTARY NOTES			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) clinical psychology health psychology mental health consultation child psychology neuropsychology combat stress psychological assessment family advocacy stress management terrorism			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Proceedings document the paper presentations/workshops/symposia covering various areas of AMEDD clinical psychology to include current professional issues in the field of military psychology, consultation/prevention/education programs, current issues and instruments in psychological assessment, innovative therapeutic techniques, and professional and paraprofessional mental health training.			

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ACKNOWLEDGEMENTS

The staff of the Psychology Service, Letterman Army Medical Center, wish to thank Colonel Joe Fishburne, OTSG Clinical Psychology Consultant, for his guidance and support throughout the planning of this conference. We are also grateful to Colonel Al Kopp, Chief of the Department of Psychiatry, Letterman Army Medical Center, for his assistance and advice especially during the preliminary stages of the development of the conference. Finally, we would like to acknowledge and thank all the people of the administrative staff of Letterman Army Medical Center, especially Captain Kay Bingner, Administrative Officer of the Department of Psychiatry. Without her efficiency, diligence and attention to the myriad of details which had to be monitored, this conference would not have been possible.

COURSE OBJECTIVES

AMEDD clinical psychologists practice in a wide variety of settings to include MEDCEN or MEDDAC Psychology Services, Community Mental Health Services (CMHSS), division consultation sections, and at numerous DOD, OTSG and MACOM staff levels. Topics included in this year's course reflect this diversity. The conference program was designed to accomplish the three objectives of the course:

- To promote knowledge and understanding of the significant issues and problems facing the Army with which military psychology must be concerned.
- To devise innovative ways for AMEDD Psychology to meet the challenges of, and produce solutions to, anticipated problems.
- To provide a forum for continuing education, exchange of new ideas, and maintenance of high levels of professional competence for military psychologists.

Paper presentations/workshops/symposia cover such areas as current professional issues in the field of military psychology, consultation/prevention/education programs, current issues and instruments in psychological assessment, innovative therapeutic techniques, and professional and paraprofessional mental health training.

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Invited Consultants

Vivian Clayton, PhD

"Evaluation and Treatment for the Elderly"

Dr. Clayton is the Project Coordinator and Director of Mental Health Services at the Over-60's Health Clinic in Berkeley, California. She also serves as staff neuropsychologist and chief, Dept. of Psychology, at John Muir Memorial Hospital in Walnut Creek, California. She is currently an instructor at the California School of Professional Psychology, Berkeley, California. Further, Dr. Clayton is the former Director of the Gerontology Program at Teachers College, Columbia University. (415) 540-7877

Leon Epstein, PhD, MD

"Dementia and Pseudodementia: Evaluation and Treatment"

Dr. Epstein (PhD, Feabody College 1941; MD, University of Tennessee 1949) is currently the associate director of geriatric mental health services at the University of California, San Francisco. He has served as staff psychiatrist at St. Elizabeth's hospital in Washington, DC, and as chief of research at the California Department of Mental Hygiene. Dr. Epstein has also served as associate medical director at Langley Porter Institute and vice chair professor of psychiatry at the University of California, San Francisco. (415) 681-8080, x237.

Philip Erdberg, PhD, ABPP

"The Rorschach: An Update on Research and Clinical Applications"

Dr. Erdberg is a former Army psychologist who has published numerous articles in the area of assessment. He has given Rorschach Workshops with John Exner since 1976, and has remained at the center of theory, research, and practice with the Rorschach. He is in private practice and does extensive work in the area of consultation and teaching. He is a diplomate of the American Board of Professional Psychology (clinical). (415) 461-1266

Steve Friedlander, PhD

"Personality Assessment of Latency-Aged Children"

Dr. Friedlander (Arizona State University 1975) is an assistant professor, Dept. of psychiatry, at the University of California San Francisco school of medicine. He also serves as coordinator of the child and adolescent portion of clinical psychology training at the Langley Porter Institute, and is currently conducting research in the area of childhood depression. (415) 681-8080, x 345

Meyer Friedman, MD

"Modifying Type A Behavior"

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George Fuller Von Bozzay, PhD

"Stress Management"

Dr. Fuller (University of Massachusetts, 1967) is the Clinical Director of the Biofeedback Institute of San Francisco. He is a licensed clinical psychologist, and also has faculty positions at the University of California at San Francisco Medical Center, the Stanford University School of Medicine and City College of San Francisco. He consults to numerous hospitals in the San Francisco Bay area, and is author of several books on biofeedback and stress management. (415) 921-5455

LCDR John Mateczun, MD, MPH
LT Elizabeth Holmes-Johnson, PhD

"The Emotional Needs of the Combat Injured
From Beirut and Grenada"

LCDR Mateczun (MD, University of New Mexico, 1978; MPH, University of California at Berkeley, 1982) served with the Marines in Okinawa from 1982-83, and is presently Chief of the Consultation/Liaison Division, Department of Psychiatry, Naval Hospital-Bethesda, Bethesda Maryland. LT Holmes-Johnson (California School of Professional Psychology-San Diego, 1979) has served as the Chairperson of the Department of Behavioral Psychology, Naval Post-Graduate Dental School, Bethesda Maryland, and is presently Assistant Chief of the Consultation/Liaison Division, Department of Psychiatry, Naval Hospital-Bethesda, Bethesda Maryland. Lcdr Mateczun and LT Holmes-Johnson planned, conducted and evaluated the mental health consultation services for the Bethesda-hospitalized soldiers from Beirut and Grenada from October through December 1983. (202) 295-2328/5158 AUTOVON 295-2328/5158

Herman Gyr, PhD
Sam Kaner, PhD

"Organizational Consultation to Medical Centers
By Psychologists"

Dr. Gyr and Dr. Kaner are organizational psychologists with PSYLOMAR Organizational Development in San Francisco. They have consulted to numerous health settings including the Veterans Administration, Kaiser Permanente and San Francisco General Hospital.

2. CIVIL RIGHTS/EQUAL EMPLOYMENT OPPORTUNITY (Employment Discrimination -
Selection, Hiring, Promotion)

a. Racial:

- (1) Douglas v Hampton, 512 F. 2d 976 (D.C. Cir 1975).
- (2) Firefighters Institute, Etc. v City of St. Louis, 549 F. 2d 506
9th Cir. 1977).
- (3) U.S. v City of Chicago, 573 F. 2d 416 (7th Cir. 1978).
- (4) Dickerson v U.S. Steel Corp., 472 F. Supp. 1304 (E.D. Penn. 1978).
- (5) Guardians Association of New York City v Civil Service., 630 F. 2d
79 (2nd Cir. 1980).
- (6) Corley v City of Jacksonville, 506 F. Supp. 528 (M.D. Fla. 1981).
- (7) Contreras v City of Los Angeles, 656 F. 2d 1267 (9th Cir. 1981).

b. Racial and Sex:

- (1) U.S. v City of Buffalo, 457 F. Supp. 612 (W.D. N.Y. 1978).
- (2) Vanguard Justice Society, Inc. v Hughes, 471 F. Supp. 670
D. Md. 1979).
- (3) Pegues v Miss. State Employment Service, Etc., 488 F. Supp. 239
N.D. Miss. 1980).

c. Sex:

- (1) U.S. v Com. of Virginia, 454 F. Supp. 1077 (E.D. Va. 1978).
- (2) Berkman v City of New York, 536 F. Supp. 177 (E.D. N.Y. 1982).

3. EDUCATION OF THE HANDICAPPED ACT

a. Schools - Handicapped Children:

- (1) Campbell v Talladega County Board of Education, 518 F. Supp. 47
N.D. Ala. 1981).
- (2) Gladys J. v Pearland Independent School District, 520 F. Supp.
609 S.D. Tex. 1981).
- (3) Stacey G., Etc. v Pasadena Independent School District, 547 F. Supp.
41 S.D. Tex. 1982).

Appendix A

CATEGORIZED LISTING OF FEDERAL AND SUPREME COURT CASES
INVOLVING PSYCHOLOGICAL TEST USE

LTC David H. Gillooly, Ph.D.
Psychology Consultant
Clinical Medical Division
Deputy Chief of Staff Professional Activities
Health Services Command
Fort Sam Houston, TX

I. CONSTITUTIONAL

a. Insanity: (Psychological Procedures in Mental Disorder and Mental Capacity Responsibility Determinations)

Jenkins v U.S., 307 F. 2d 637 (D.C. Cir. 1962 en banc);
117 U.S. App. D.C. 346 (1962) rehearing;
330 F. 2d 222 (1962).

b. Equal Protection:

Washington v Davis, 96 S Ct. 2040 (1976).

c. Functional Literacy:

Debra P. v Turlington, 474 F. Supp. 244 (M.D. Fla. 1979);
644 F. 2d 397 (5th Cir. 1981).

d. Inadequate Prison Health Care:

Ruiz v Estelle, 503 F. Supp. 1265 (S.D. Tex. 1980).

e. False Arrest:

Smiddy v Varney, 652 F. 2d 866 (9th Cir. 1981);
665 F. 2d 261 (9th Cir. 1981).

The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as necessarily reflecting the views of the Staff Judge Advocate, the Department of The Army or the Department of Defense.

Footnote

*Statements herein reflect only the private views of the author and are not to be construed as official or as necessarily reflecting the views of the Department of the Army or the Department of Defense.

that are approved under the Federal Property Management Regulation or meet the requirements of Title 44 U. S. Code for documenting, safeguarding and disposing of acquired psychological test data. Documentation, maintenance and disposition of data and reports eventuating from psychological test usage must comply with lawful files administration.

Q: Why are other bone fide behavioral science professionals conspicuously omitted from Appendix B of the regulation?

A: Others are "conspicuously absent" because the Regulation is intended to inform readers of occupation/specialty titles having official delineated duties in this area. The military and civilian personnel categories listed are in accordance with CPO job classification standards and military personnel SSJ/IOS guidance.

Q: If there is no qualified psychologist assigned to an MTF, what can be done to maintain the provisions of this Regulation? Can the hospital hire a "civilian consultant" to do the professional functions?

A: No, a "consultant" is not, by law, to be utilized for provisions of clinical services. Federal Personnel Manual, Chapter 304, specifies that consultants are neither to perform nor supervise the performance of operational functions. The local hiring of a "contract" health care provider psychologist is a different matter. Perhaps the best approach would be to defer any use of these procedures within the MTF, secure the instruments, and request guidance from a qualified psychologist assigned to a supporting "back up" or neighboring MTF. The Regional or HSC Psychology Consultant could also be contacted for assistance in coordinating this support. Recognize that a "curtailment" of services requires official approval from higher headquarters.

Q: Can other approved users provide the direction and review functions of the psychologist official?

A: No, not unless he/she is a qualified psychologist. The legal, administrative and professional accountability for these functions must rest on the shoulders of professionals defined and recognized by lawful statutes as having applicable expertise in this area.

Q: People are using these kinds of procedures all over post, outside the authority of the MEDCEN/MEDDAC. Does this Regulation direct the control of all psychological test use on an installation?

A: If the installation is under HSC authority, yes (i.e., LANC, VRAMC, USAG, Ft. Detrick). Otherwise, the answer is no. An HSC Regulation only has a scope of applicability to HSC Subordinate Activities. Previous comments about the "Responsibilities" section offers a possible "avenue of (local) staff level influence" that the Director of Health Services has in some of these matters. It should be mentioned also that the final recommended Distribution Listing of this Regulation included the Surgeons of all Major Commands. Hence, all MACOM Surgeons are to be informed about the necessity for controlling the use of these instruments, and their support in this effort at the other types of installations is encouraged.

A: Because usage of these specialized test procedures must be in lawful compliance with recent court decisions. There is no intent to claim that psychologists are the sole competent group in the field of human behavior. In point of fact and to the contrary, the Regulation has provisions to permit professionals, outside the psychology career field, to use psychological test procedures. The Regulation does not exclude all helping professions outside psychology from "asking questions to their clientele which aim toward measuring behavior or giving a 'test'." To do so would indeed be an inappropriate overexclusion. Qualified health care practitioners have been asking questions, commenting, appraising and formulating impressions of "psychological" components over the years based on their professional training and experience. When it is desirable and applicable to use in MIF functions the specialized procedures defined as psychological tests, every effort is to be made to ensure their proper application and use. Provisions of health care must be assured to involve the highest qualitative levels of available and applicable professional expertise. Clinical Psychologists, qualified by doctoral level training and experience, are defined and recognized by lawful statutes and guidelines as discrete specialty health care professionals. It is advisable that MIF Quality Assurance programs be afforded the professional and staff advice of available legally recognized experts in psychological testing matters.

Q: Why is it necessary to impose "unnecessary controlling conditions" on these materials? They are generally harmless laboratory procedures unlike others; i.e., X-Rays, urine, blood samples, etc.

A: The effect of taking these tests and their resulting data are not benign. Generally, health care providers have not been trained in the clinical significance of the variations from standards and norms for different patient populations. The clinical "values" and "profiles" received from these procedures are qualitatively different from reports of "lab studies" typically used in medicine dispositions. Also, "controlled conditions" for these materials are needed in the prevention both of patient rights infringement and of departures from lawful "duty of care owed" a patient in a medical setting. These are of primary concern. But in addition, the "conditions" in effect incorporates medical records guidance and applicable elements of current accepted professional practice standards that influence the legality of psychological test usage and resultant reports.

Q: Chaplains, assigned to the Department of Ministry and Pastoral Care, provide counseling to people and may use tests that could be considered psychological. How does this Regulation effect this type of practice?

A: This Regulation pertains to use and control of psychological test materials and does not address within its scope the domains of "counseling," remediation, therapy, or treatment. If procedures used by Chaplains, or by any other personnel assigned to a MIF, meet the legally recognized definition of a Psychological Test, such usage is considered a professional activity subject to the provisions of user professional qualification appraisal and use approval of the Regulation. Also Chaplain Sections within MIFs (Departments of Ministry and Pastoral Care) do not have legally authorized records or files

HSC Psychology Consultant. Staff level concerns about micromanagement had to be addressed by insisting that command coordination of regional psychological assets was required in the endeavor. The letter, "Appointment of Psychologist Official," went to the field, dated 17 July 1984 (See Appendix C). Then my phone began to ring off the hook.

Stepping Out

The ways in which psychologists began to step forward, with regulation in hand, to attempt to implement the regulation vary. Some have used Daily Bulletin and Professional Committee meeting announcements, in addition to having briefing and planning meetings with Deputy Commanders for Clinical Services and Chiefs of Patient Administration Divisions, Logistics and Comptrollers. The psychologist consumer in the field now have authority to allow their efforts and strategies to meet local needs.

Recurring Issues

In the course of trying to implement this official guidance, it was soon discovered that the same questions were being posed to psychologists that had been previously wrestled with in the formal and informal systemic staffing during the drafting stages. What follows are responses to questions that "worked" once, and maybe a couple of more times by members of this audience.

Q: Why not just create a list of the procedures that are to be considered "psychological tests" within the scope of the Regulation? That would simplify the definition and identification questions.

A: A by-name listing statement of the "number of (relevant) psychological tests," which are marketed and commercially distributed, runs the risk of Command indorsement interpretation and appearance. But more importantly, the status of appropriate professional use of these procedures changes in various situations, with various beneficiary populations and with ongoing clinical applicability research literature. And, in the case of some instrument editions, their status are apt to change with present deliberation by the courts regarding their legality.

Hence, such a listing is not advised. It was on HSC Staff Judge Advocate's guidance that the present definitional elements of a "psychological test" were included as necessary and sufficient. This definition is extracted from the currently recognized professional authority documents and case law which, by the Frey decision (Frey 293 F 1013 (D.C. Cir 1923), has been and would be in fact used in court proceedings. Definitions would be obtained from currently recognized professional standards in the practice of psychology, and now in the Army by reference to this regulation.

Q: A variety of health care providers, other than psychologists, are competent in the field of assessing human behavior and have been asking patients questions about psychological factors for years. This is not the exclusive domain of psychologists. Why is it necessary to have a Regulation on this subject?

Time since doctoral degree attainment; time since award of military psychologist SSI (and Additional Skill Identifier) or of civilian Psychologist GS-11 and above, 180 Series position placement; acquisition of recognized advanced psychology specialty training, board certification, licensure are all legitimate factors to be considered in decisions of selection and delegation of the "Psychologist Official" within an HSC Activity, Region or Area.

In the "Policy" paragraphs, the psychological evaluation function is clearly elevated above and beyond the realm of "just another set of lab procedures to be ordered." Use includes a professional role verses an ancillary technician role. There is reference to the wide impact that these procedures have on clients/patients, to the potential for harmful misuse, and to prohibitions of unqualified users. The delegated responsibility to direct testing is exclusively that of qualified psychologists. There are provisions for other health care professionals to use these procedures with formal approval (Credentialed privilege after review by "psychologist official"). General guidelines are given to assist in determining other users' qualifications. Compliance with APA "Standards, Ethical Principles, and Specialty Guidelines" in testing is now an HSC regulation matter, with the influence of law under the Uniformed Code of Military Justice. Adherence is vital for Health Services mission. Individuals are alerted to the variety of possible consequences of unlawfully breaching these guidelines.

In the "Procedure" section, you will note that the term, "psychologist official," is used throughout, and in one instance the terms, "delegated, responsible psychologist official," were intentionally employed. The original plan was to allow psychologists to use this phrase for recommending the publication of official "Additional Duty Assignment" orders, or like instruction, from their local authorities.

Silent Machinery

When the regulation was distributed, the anticipated response was not received. In fact, in numerous conversations with psychologist callers over the first months, it was reported that they had not yet even seen a copy of the document, which had particular pertinence to them.

I began to surmise that full distribution was somehow being held up locally, and my fantasy was that the copies were simply being filed for incubation in obscure Adjutant's regulation libraries and at Departmental Office levels. The situation was unacceptable when promulgation of official policy, etc. was incomplete. Privately, I side-stepped frustration and began to search for ways to effectively get the word out.

Rather than calling all Chiefs of Psychology Services, I decided on a method to not only insure its distribution to proper levels but also, if chance would have it, initiate dialogue in each of the psychologist's respective arenas. The plan was to draft an HSC Command Letter which tasked each MIF Commander to officially designate a local "Psychologist Official" to implement the regulation. And a copy of these orders were to be forwarded to

including all Departments/Services of Medical Treatment Facilities (MTF), Surgeons of all major commands, the Physical Disability Agency that processes medical boards, and the Army Research and Development Command. And incidentally, the Command Editor also helped me to finally reduce the reading level to Grade 15, and supported publication by waiving the eleventh grade requirement for regulations due to the professional and legal concepts used. Now on to the internal content of the regulation. In the "Terms" section, the definition provided for a "Psychological Test" is an amalgamation from APA official publication statements that, by the way have been used in recent court actions. You will notice that, by specifying "subjective distress" and "individual impairment" (which are the basic two criteria for "disorders" under DSM III), psychologists' diagnostic expertise is assumed. (A more definitive statement about authority to "diagnose" must await subsequent regulatory approval.) The added "identifying criteria" statements were purposefully connected with the grammatic conjunction, "or," at the recommendation of SJA to allow "psychologist officials" discretionary latitude in their control responsibilities. "Authoritative references" can be our discipline's standard academic and professional texts (i.e., Anastasi, Cronbach, Nunnally, Rapaport, Lezak, Wolman handbooks, etc.) or others (i.e., Burors' 8th Yearbook and its Table 8). Three general categories of procedures were excluded, not because psychologists have any less expertise in these areas but because these types of instruments are not necessarily and directly related to "mental disorders or disturbance and physical disease or disability", and it would be impractical for psychologists to be held accountable for their use.

The definition of "Qualified Psychologist" was extracted both from the U. S. Office of Personnel Management Qualification Standards, Psychology Series (GS-180), Jan 1969, TS-122 and Apr 1978, TS-165 and from Appendix E, AR 40-1. These references, you must realize, deal with the qualification of civilian personnel. We used this statement in order for the regulation to be consistent with OPM requirements. This definitional paragraph should be considered as necessary but not sufficient (or all encompassing) for other official purposes (i.e., as criteria for local professional privilege credentialing of clinical psychologists).

In the "Responsibilities" segment, the functions of the Director of Health Services (the current position title for "Post Surgeon") are mentioned to provide an avenue of staff level influence in those instances of test use outside the MTF that are viewed as "conditions affecting the health of the command" (or individuals within the command) and "matters concerning the delivery of health care services." The Deputy Commander for Clinical Services (the new position title for "Chief of Professional Services") is informed that psychological test programs fall within the domain of professional activities under the general control of that office. The quality and nature of the Department of Psychiatry Chiefs' review responsibilities does not include technical specialty concerns with respect to this subject, and the scope of influence is circumscribed to the Department. Psychologists are to be responsible for professional and staff advice, direction and control. "Professional seniority" does not necessarily equate to rank/grade seniority.

The legal experts were very supportive from the beginning and were available at times of need when later hassles in staffing actions were encountered. Basically, I felt that, if I could establish a foundation in legal precedence and case law, any tribulations along the way could by and large be circumvented. It was my hope that, when problems arose, I could simply reply, "It was only fair and just; and, by the way, a matter of law." In point of fact, when the draft regulation made its rounds for preliminary staffing, you better bet that I saw to it that a copy of the SJA's strong concurrence was conspicuously attached. As it was, this emphasis merely elevated the need of such a regulation into prominence. The actual wording had to be hammered out, bit-by-bit, with numerous staff officers along the way of the reviewing maze.

It should be mentioned that the original draft was reviewed, prior to its entry into the HSC staffing complex, by senior Psychology Officers and their staff from seven Medical Centers, two Medical Department Activities, and the Academy of Health Sciences with resulting endorsements. The draft also incorporated SJA guidance in the specific language of the definitional elements, and I was insistent that the major elements of current and accepted professional practice standards not be tampered with, thereby maintaining legal conformity in the use of test materials.

In the seventeen months gestation period, from planned conception to breech birth in May 1984, a host of interprofessional and administrative wrestling matches took place, the not even least of which was the fact that the basic format for regulations underwent change (in the labor room), and the reading level was judged too high (Grade 22) and, hence, unacceptable for publication (or birthing in the Delivery Room). And these had to be dealt with, after much work had already taken place to navigate over the interprofessional rough terrain, which at times was personified in retorts of, "Not only no, but hell no ... no way!" Some of the maps used to transverse this journey's chuck-holed roads will be addressed later in a discussion of some of the staff questions that were asked and responses that were given.

The Product

The final regulation, entitled, "Use and Control of Psychological Test Materials" (HSC Regulation 40-3; See Appendix B), includes definitions of terms, responsibilities, policy, and procedures of significance to health care psychologists. It should be noted that it was finally designated on extremely low "40 Series" regulation number by the HSC, Chief of Staff Office, at a time when other regulations were receiving "40-200+" numbers. It was this Office also that changed the original "possibility of local supplementation" to the present condition of "prohibited supplementation." My informal sources report that the legality of the content apparently influenced these "birthing process" decisions.

One additional introductory item should be noted about the distribution before comments are made highlighting the content itself. Note that the regulation was sent to just about every conceivable place with a need-to-know,

Deputy Staff Judge Advocate (SJA) at HSC. This interaction was extremely valuable, much like that with a superb travel agent. Out of our initial half-hour conversation and brainstorming came a shared and growing appreciation for the need to insure both the protection of beneficiary rights and the lawful discharge of the health care system's responsibility and "duty owed" patients. Out of our roving ideas came the voiced concepts of "professional misrepresentation of misconduct, unlawful invasions of privacy, negligence in private information safeguards, and discriminatory health care practice." These were biggies! They were also at the heart of some very "hot" tort law matters at the time.

It was at this meeting that the service from the FLIGHT (Federal Legal Information Through Electronics) Center in Denver was discovered. I was encouraged, as a Major Command consultant to call the Center directly (AV 926-7531) and ask for "Search Reports" on Federal District and US Supreme Court cases pertaining to any references in the usage of psychological tests. The answering attorney helped me to elaborate my need and come up with alternate search constructs. Within three duty days, I began to receive a series of computer print out pages of court case references, a summary of issues for each case, and a 4-5 line extract of narrative transcriptions surrounding the selected search concept. An absolute gold mine was at my fingertips and I enjoyed the tedium of syphoning through those reports for relevancy to my need.

I was now prepared to approach my journey fortified with the knowledge that I could provide evidence about the status of health care delivery by psychologists and that the use of psychological tests had been subject to close scrutiny in the courts.

I was able to show that these matters have involved violations of the Constitution, the Civil Rights Act, the Education of Handicapped Act, the Rehabilitation Act, the Sherman Act, and the Social Security Act, to mention a few, as well as alleged labor relations practice and employment discrimination (in hiring, promotion, training and job selection by race and sex). The manner and conditions of control and confidentiality of psychological test program results and of test security maintenance by psychologists were also reviewed in court decisions.

It was also found that the judgments of the courts were primarily based, as best as I could decipher, on whether psychological procedure applications had been employed in a manner acceptable to current professional practice. And "Bingo," the legality of use of these tests repeatedly hinged on conformity to APA's Standards for Educational and Psychological Tests and the "Ethical Principles of Psychologists." I was now "hot-to-trot" and begin my trek.

I met again with my SJA cohort and shared with him a categorized listing of cases (See Appendix A) supported by a folder of pertinent FLIGHT Search Reports. I even found myself rummaging through volumes of the HSC, SJA Legal Library during off duty hours. What a trip this had become!

In the meantime, the corporate marketplace permitted test materials to be widely purchased and dispersed with only minimal checks on supervisory controls. The American Psychological Association (APA), recognizing many of the inherent control difficulties growing in this area, adopted for publication the Standards for Educational and Psychological Tests, which has been professionally recognized as the universal, authoritative document, together with the "Ethical Principles of Psychologist."

Then when the literature began to publish articles about the use of psychological tests being the subject of numerous State, Federal District, and Supreme court decisions, incidents of known abuse in test usage in the civilian sector and the AMEDD began to surface and filter among psychologist colleagues, who soon realized that they were generally impotent to affect local changes pertaining to, and acceptance of, their professional standard mandates to safeguard the employment of these instruments. Nevertheless, psychologist providers continued to be persistent in attempting to exercise their professional obligation to insure safeguards. And in most cases corrective actions were initiated.

An Avenue For Solution

As the author, now as Health Services Command (HSC) Psychology Consultant, began to compile a record of observed and reported incidents of known test misuse, it became increasingly necessary and important to address these long-standing problems head-on. What apparently was lacking was an authoritative directive about psychological test material usage and control, a regulation of some kind that would enable psychologists to have an official say in the matter. It was conceivable that such a directive would be even more possible in the AMEDD than in the civilian sector.

But how was such a document to be legitimately justifiable to seemingly uninformed and unappreciative authorities? What specific testing issues needed to be the focus of attention and addressed? What kind of difficulties were to be anticipated for surmounting in its acceptance toward final staff approval at HSC? And parenthetically, what additional matters could be written into such a document, to clarify and resolve other nontest-related professional concerns, without jeopardizing its overall chances of ultimate approval?

This indeed was shaping up to be a grand adventure, which could have ultimately even ended in futility. But at the outset in January 1983, when personal schemes were entertained to maximize the opportunity of a successful voyage, it came to mind that oftentimes I had noticed that the health care system more readily accommodated itself in the past to changes, if such changes were tied to the requirements of law.

Necessary Collaboration

Burdened with my list of test misuses and only a vague recollection of the partial substance of a few American Psychologist articles and "Judicial Notebook" citations from the APA Monitor, I went knocking on the door of the

Use and Control of Psychological Test Materials:
The Development, Implications, and Effects
of a New Health Service Regulation*

LTC David H. Gillooly, Ph.D.
Brooke Army Medical Center

Abstract

Over the years Army Medical Department health service providers in psychology have been persistent in exercising their professional obligation to insure safeguards in the use of psychological assessment tools in research and clinical settings. Notwithstanding, incidents of misuse of these techniques continued to be reported to consultants by colleagues in the field. It became increasingly necessary and important to address these problems head-on by promulgating regulatory guidance effective throughout the command responsible for health services delivery (HSC Reg 40-3). This paper presents an overview to highlight the tribulations of psychologists, the influential and cooperative relationship with legal experts, and the behind the scenes efforts that produced the attainment of a milestone for the Army psychology program. Major advances in policy clarification are addressed and official responsibilities are delineated with regard to usage direction and the control of these instruments. Commentary is provided that elaborates on specific sections of the regulation, on procedural implications for psychology services, and on the rationale and justifications successfully used in responding to systemic and interprofessional inquiry. A categorized listing of Federal and Supreme Court cases involving psychological test use is appended.

Introduction

Ever since the early spring of 1967, when the author first arrived on the Army Medical Department (AMEDD) scene as the last "direct commissioned" masters-level "Psychology Assistant" and was assigned to the old Medical Field Service School to train the then enlisted "Psychology Technicians" (MOS-91G) to assist doctorally trained Clinical Psychology officers in the acquisition of psychodiagnostic interview and test data, limitations of responsibility in testing by subdoctoral psychology-related personnel had been espoused. Over the course of years, the Psychology Assistant officers were phased out of the personnel system and the Psychology Technicians were combined with the Social Work Technicians and are now called "Behavioral Science Specialists," who enter the field having obtained little or no training in psychological test administration and scoring.

PROFESSIONAL

ISSUES

Delmont Morrison, PhD

"Assessment of Pre-School Aged Children"

Dr. Morrison (University of Washington, 1963) is presently a clinical professor in the Department of Psychiatry, and clinical psychologist in Child & Adolescent Services, at Langley Porter Psychiatric Institute in San Francisco. Dr. Morrison is currently conducting research in the area of perceptual deficits in learning disabled children. (415) 681-8080/Ext. 275

Sam Pirnazar, PhD
Jane Hach

"Computerized Psychological Assessment"

Dr. Pirnazar and Ms. Hach are representatives of National Computer Systems (NCS), one of the leading companies in developing, publishing, and distributing integrated hardware-software systems for scoring and interpreting psychological tests. They will present the latest developments in automated assessment utilizing the Millon tests, the MMPI, and other instruments. (202) 296-2223

Robert Sbordone, PhD

"Subtle Neuropsychological Deficits
In Head Injured Patients One Year Post Injury"
"Differential Diagnosis of Dementia"

Dr. Sbordone is co-director of the Orange County Neuropsychology Group, and assistant clinical professor at the University of California-Irvine School of Medicine. He completed an NIMH post-doctoral fellowship at the UCLA Brain Research and Neuropsychiatric Institutes, and is currently a diplomate of the American Board of Professional Neuropsychology. He has published extensively in the professional literature, and is widely recognized for his expertise in closed head injury, dementia, and cognitive rehabilitation. He has developed numerous computer-assisted programs for the assessment and rehabilitation of cognitively impaired patients. (714) 841-6293

R. K. Janmeja Singh, PhD

"Consultee-Centered Case Consultation"

Dr. Singh (Boston University, 1965) was trained in consultation at the Harvard School of Public Health with Dr. Gerald Caplan. He has consulted with many public agencies and private corporations, including Letterman Army Medical Center since 1972. Dr. Singh was assistant director of the Center for Training in Community Psychiatry (Berkeley), and currently is director of Human Growth Systems Institute. He is a member of the clinical faculty at the University of California San Francisco Medical School, and an adjunct faculty member of the California School of Professional Psychology-Berkeley. (415) 839-2772

b. School - Discrimination in Special Education:

- (1) Larry P. v Riles, 495 F. Supp. 926 (N.D. Calif. 1979).
- (2) Parents in Action on Special Education (PASI) v Hannon, 506 F. Supp. 831 (N.D. Ill. 1980).
- (3) Papacoda v State of Connecticut, 528 F. Supp 68 (D. Conn. 1981).

4. REHABILITATION ACT

Anderson v Banks, 520 F. Supp 472 (S.D. Ga. 1981).

5. SHERMAN ANTITRUST ACT (Psychologists' Independent Application of Psychological Evaluation Techniques)

Virginia Academy, Etc. v Blue Shield of Virginia, 469 F. Supp. 552 (E.D. Va. 1979); 501 F. Supp. 1232 (E.D. Va. 1980).

6. SOCIAL SECURITY ACT (Disability Impairment Definition)

- (a) Paskowski v Finch, 316 F. Supp. 1050 (W.D. Penn. 1970).
- (b) Neumerski v Califano, 513 F. Supp. 1011 (E.D. Penn. 1981).

7. LABOR RELATIONS (Security and Control of Psychological Test Program and Results)

Detroit Edison Co. v National Labor Relations Board, 560 F. 2d 722 (6th Cir. 1978), vac, 99 S. Ct. 1123 (1979).

Appendix B

HSC Reg 40-3

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY HEALTH SERVICES COMMAND
Fort Sam Houston, Texas 78234

Regulation
No. 40-3

8 May 1984

Medical Services

USE AND CONTROL OF PSYCHOLOGICAL TEST MATERIALS

Supplementation of this regulation is prohibited without prior approval from Headquarters, US Army Health Services Command (HQ HSC), ATTN: HSCL-C.

1. PURPOSE AND SCOPE. This regulation prescribes HSC policy and procedures on the use and control of psychological test materials. This policy applies to all HSC activities.
2. OBJECTIVE. The objective is to identify a class of specialized professional materials and to provide guidance in the proper management of services using psychological test procedures.
3. EXPLANATION OF ABBREVIATIONS AND TERMS.

a. Abbreviations.

HQ HSC	Headquarters, US Army Health Services Command
MEDCEN	US Army Medical Center
MEDDAC	medical department activity

b. Terms.

(1) Psychological Test. Any standardized assessment device, test or inventory, designed and used for understanding and diagnosing the nature and causes of, and for predicting and reducing the following effects of, mental disorder or disturbance and physical disease or disability: subjective distress, individual impairment, and psychological and emotional factors.

(a) This includes tests which focus on the following features of mental disorders or disturbance and physical disease or disability:

- 1 Cognitive and intellectual abilities.
- 2 Aptitudes.
- 3 Emotions.
- 4 Motivations.
- 5 Personality characteristics.
- 6 Psychoneurologic functioning.
- 7 Academic skills and educational achievement.
- 8 Other aspects of human experience and behavior.

(b) The following added criteria are given to aid in identifying a procedure as being a psychological test within the scope of this regulation. The test has been:

1 Involved in appellate decisions of the Courts of the United States, or in the decisions of their administrative agencies, both federal and state, that define the admissibility of clinical, counseling, school, or industrial psychologists' test results; or

2 Developed by psychologists applying principles, methods, and procedures of the science of psychology in test construction; or

3 Introduced to, or routinely evaluated in, professional psychological practice by publications authored by psychologists in recognized clinical, counseling, or consulting psychology or medical literature; or

4 Listed or reviewed in authoritative references either of psychological testing and evaluation or of mental measurements classified as individual achievement, intelligence, aptitude, personality, psychology, or neuropsychology; or

5 Obtained from vendors making known that sale is made in adherence to the ethical standards of the American Psychological Association.

(c) The following types of procedures are excluded from the scope and intent of the "Psychological Test" definition of this regulation:

1 Surveys and questionnaire formats used in measuring group attitudes and interests.

2 Surveys and questionnaire formats administered for purposes of assessing an individual patient's social relationships (i.e., marital and family) or pediatric developmental milestones and schedules.

3 Instruments solely measuring occupational interest or choice, role~~x~~ or skill performance, and vocational adaptation or leisure.

(2) Psychological Test Direction. This means the technical and operational management, control, supervision, instruction, and guidance of the actions of individuals, or of the operations of services, pertaining to psychological testing. Psychological test direction is a functional responsibility of the delegated psychologist official and includes the legal, administrative, and professional accountability for such services.

(3) Qualified Psychologist. A person having an appropriate degree (doctoral for clinical psychology) from a regionally accredited university or professional school providing an organized, sequential clinical or counseling psychology program in a psychology department or unit of a professional school. The person has acquired supervised training (12-month internship for clinical psychology) that is directly related to the functions to be performed and services to be provided. Doctoral education programs and other professional training and internship programs accredited by the American Psychological Association, or evaluated as acceptable by The Office of The Surgeon General, are recognized as meeting this definition.

(4) Test Administration. Orally, manually, or electronically giving a test, or portion thereof, to individuals following standard or altered method and instruction.

(5) Test Scoring. The manual or electronic tabulation, compilation, or summation of derived test data in accordance with developed standards, criteria, norms, and methodology.

(6) Test Users. Individuals who choose tests, interpret scores, make decisions, make dispositions, render reports, or who conduct experimental studies, based on test scores or results.

4. RESPONSIBILITIES. Responsibilities are as follows:

- a. US Army Medical Center (MEDCEN) and medical department activity (MEDDAC) commanders, for ensuring installation director of health services functions.
- b. Deputy commander for clinical services, for general supervision and control of professional activities to include psychological test and assessment programs.
- c. Chief of the department of psychiatry, for review of work methods and operational procedures within the department.
- d. Chief of clinical psychology services or a psychologist assigned to a community mental health service as appropriate by professional seniority, for advising in professional and staff matters. This includes directing the use, security, and quality control of psychological test instruments in the functions of patient care, clinical investigations, and community consultation and prevention.

5. POLICY.

- a. The use of psychological test and assessment procedures within HSC is a professional health care function and clinical service.
- b. The content of psychological tests includes sensitive, private, and confidential information. The processes of obtaining, recording, and reporting of this information affects individuals and their lives or careers. Every effort will be made to ensure these procedures and test reports are not misused. The use of psychological testing techniques by unqualified persons is prohibited. Guidance in the use and control of these procedures ensures that health care beneficiaries receive relevant and effective evaluation and disposition.
- c. Only qualified psychologists, de facto as a group (see paragraph 3b(3)), are authorized to conduct and supervise psychological testing. Psychological tests are administered, scored, and interpreted only in situations having the professional supervision and accountability of a qualified psychologist. Requests for exceptions to this policy will be reviewed individually by the HSC Psychology Consultant (ATTN: HSCL-C).
- d. Other psychological test users must demonstrate documented formal training, skill under supervision, and working knowledge of both test measurement principles and the literature relevant to the test(s) employed. Nothing in this regulation is intended to prevent the use of psychological tests by health care professionals who demonstrate appropriate training, skill, and knowledge in their use and who are formally approved to do so.
- e. The use of psychological test procedures will adhere to the professional requirements set forth in the publications of the American Psychological Association entitled "Standards for Educational and Psychological Tests," "Ethical Principles of Psychologists," and the "Specialty Guidelines for the Delivery of Services by Clinical, Counseling, Industrial and School Psychologists."
- f. Nonadherence to the policies and procedures of this regulation may jeopardize medical, legal, and administrative actions based on or supported by test results. Nonadherence can also raise issues ranging from professional misrepresentation or misconduct to unlawful invasion of privacy or negligence in the safeguard of private information to discriminatory health care practice.

6. PROCEDURES.

- a. To insure proper use and security of psychological tests and safeguard of resulting data and reports, procedures listed at appendix A are to be maintained. All organizations must request guidance from the locally delegated, responsible psychologist official before purchasing and/or using any such

test procedures. In the absence of a locally available and qualified official, these matters will be referred to the appropriate MEDCEN health service region consultant in psychology.

b. Purchase requests for psychological test equipment or supplies should include a statement of need determination and use approval by a qualified psychologist prior to final fund certification and approval signatures.

c. Psychological test use warrants medical treatment facility quality assurance program inclusion. Appraisal and review functions are to be provided by the responsible psychologist official. Psychological test interpretation and reporting will be performed only by individuals who are qualified and granted privileges to do so by the MEDCEN/MEDDAC credentials committee. Qualification guidelines for occupational specialties typically involved in psychological testing are at appendix B.

d. The use of computerized psychological test administration, scoring, and interpretation services is to be considered a professional-to-professional consultation requiring the direction of a qualified psychologist.

e. Local agreements may be set up to promote general familiarity and appreciation of psychological test usage in clinical and consultative services, medical education and training, and clinical investigation. These arrangements are subject to the approval of the responsible psychologist official. They should clearly include the conditions listed in appendix A.

f. A qualified psychologist will review for technical accuracy and appropriateness any documents or reports that:

(1) Cite psychological or neuropsychological studies, testing, evaluation, or like terms.

(2) Are submitted for consideration in health care disposition, administrative boards, or Medical Evaluation Boards, including safety boards.

g. In Medical Board action specialty consultation from a qualified psychologist should be obtained when a patient's personal, social, and industrial impairment is shown by objective findings obtained from psychological testing.

h. Further guidance regarding instances not included in this regulation should be obtained from psychologist officials who are available to medical treatment facilities.

APPENDIX A

SUPPLEMENTAL CONDITIONS OF PSYCHOLOGICAL TEST USE

The following conditions supplement the basic procedural guidance for psychological test equipment, data, and reports:

1. Test instruments, methodology, materials, and equipment:

- (a) Are permitted limited access only to persons with professional interests who safeguard their use and security.
- (b) Are secured under locked storage when not in use.
- (c) Are not allowed uncontrolled release or departure from physical premises of professional services or agencies.
- (d) Are not reproduced in any fashion.
- (e) Are not described or displayed to others in ways that might invalidate the technique.
- (f) Are not to be administered to, or practiced on, the general public, including family members or friends. (It is acknowledged that naive subjects may be used in approved training programs.)
- (g) Are used only in situations having established formal and local referral procedures to either a qualified psychologist or to other mental health professionals.
- (h) Are subject to control, recall, and use under the direction of the responsible psychologist official.
- (i) Are disposed of by locally appropriate destruction means when they are no longer usable due to obsolescence, defacement, or state of disrepair.

2. Acquired raw test data, test scores, and user aid documents (i.e., test answer sheets, profile sheets, score summaries, or inference notes):

- (a) Are released only to persons who are qualified to interpret and use them properly, and such release is closely supervised by a qualified psychologist.
- (b) Are subject to access and disclosure procedures of AR 340-21 and AR 40-66, if a patient or client requests copies of documents that result from psychological testing. Decisions of release, access, and interprofessional transmittal will include:
 - (1) The judgment of adverse affects on the individual's mental health.
 - (2) The dispositional advice by the psychologist official in collaboration with the attending physician or the chief of the department of psychiatry.
- (c) Are to be reported in official medical records or administrative or legal correspondence only with technical guidance, review, and approval of a qualified psychologist.
- (d) Are maintained and disposed of in accordance with AR 340-18. When, and if, documents described in paragraph 2 (acquired raw test data, test scores, user aid documents) are found in inpatient treatment records, outpatient treatment records, health records, consultation service case files,

HSC Req 40-3

or "convenience files," they should be removed and given to the psychology organizational element for proper filing in the clinical psychology individual case file (917-07).

3. Reports of psychological test evaluation or assessment (i.e., written statements of test data analyses to include summaries, interpretations, diagnostic formulations, dispositions, and consultation request responses) will conform to the requirements of paragraphs 6c and 6f of this regulation. Requests for release and disclosure of psychological testing evaluation reports will be processed IAW AR 40-66 and AR 340-21. Refer to paragraph 2(b), above, for requests from patients.

4. IAW AR 40-66, a review of clinical psychology entries in medical records (i.e., inpatient treatment records, outpatient treatment records, and health records) will be an integral part of the "documentation review" activity in the Quality Assurance Program.

APPENDIX B

QUALIFICATIONS OF OCCUPATIONS SPECIALTIES
IN PSYCHOLOGICAL TESTING

The following is a list of qualification guidelines for personnel who are typically involved in the use (administration, scoring, interpretation, and reporting) of psychological tests.

1. Military and Department of the Army civilian psychologists who are eligible candidates for full professional responsibility in psychological testing include:

a. Military officer personnel possessing the specialty skill identifier of psychologists (68S or 68T).

b. Department of the Army civilian personnel who function in, and have been appraised as qualifying to perform psychological evaluations in, positions of:

(1) Clinical psychologist (series 180, GS-11 and above).

(2) Counseling psychologist (series 180, GS-11 and above).

2. Military officer personnel possessing the specialty skill identifier of behavioral science associate (68U):

a. Those who are considered as possessing technical skill levels in psychological testing functions provided these activities are subject to:

(1) A systematic program of profession peer review and

(2) The approval of a qualified psychologist.

b. Those who have successfully displayed technical competence in psychological testing to Army Medical Department clinical psychologist supervisors and trainers but lack the professionally recognized doctoral degree to function independently as psychologists (68S or 68T).

3. Department of the Army civilian personnel who function in psychologist positions (series 180, GS-09) and who qualify may be involved in the following testing activities only in consultation with a psychologist supervisor having professional accountability responsibilities. These personnel may:

a. Administer and score psychological tests.

b. Make preliminary interpretations of the validity and significance of test data.

c. Evaluate overall patterns revealed by some psychological tests.

4. The following military and civilian personnel may be used for psychological test administration and scoring only under the supervision of a qualified psychologist, but they are not permitted to make test interpretations or accomplish other test usage activities.

a. Military enlisted personnel awarded the military occupational specialty of behavioral science specialist (916).

b. Department of the Army civilian personnel who qualify to function in psychology aid positions (series 181, GS-04) or psychology technician positions (series 181, GS-05 through GS-09).

The proponent is the Office of the Deputy Chief of Staff, Clinical Services. Send comments on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Cdr, HSC, ATTN: HSCL-C, Fort Sam Houston, TX 78234.

FOR THE COMMANDER:



GERALD D. ALLGOOD
Colonel, MSC
Chief of Staff

R. O. GRAY
Colonel, AGC
Adjutant General

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Cdr, MEPCOM (ATTN: MEPCOS), Ft Sheridan, IL 60037 (2 cy)
Cdr, US Army Medical Command, Korea, APO San Francisco 96301 (2 cy)
Cdr, US Army Physical Disability Agency, Forrest Glenn Section - WRAMC, WASH DC 20307 (6 cy)
Cdr, US Army Medical Research and Development Command, Ft Detrick, Frederick, MD 21701 (2 cy)
HSAG-P (50 cy)



Appendix C

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY HEALTH SERVICES COMMAND
FORT SAM HOUSTON, TEXAS 78234

REPLY TO
ATTENTION OF:

S: 3 Aug 84

HSCL-C

17 JUL 1984

SUBJECT: Appointment of Psychologist Official

Commanders
HSC MEDCEN/MEDDAC

1. Reference HSC Regulation 40-3, Use and Control of Psychological Test Materials, 8 May 1984.
2. Referenced regulation requires a qualified psychologist to perform the functions of "psychologist official" for advising in clinical services and staff matters. In brief, this official is to direct the use and control of psychological tests, to review test purchase requests, to appraise clinical privilege credentialing qualifications of test users, and to review documents and reports reflecting psychological test studies. (See paragraphs 3b(2) and (3), 4d, 6a, c, e, h; and appendix A, paragraphs 1(h) and 2(b)(2).)
3. At most facilities, a qualified psychologist assigned to either the position of Chief, Clinical Psychology Service, or of psychologist in a Community Mental Health Service would be an eligible candidate for appointment as psychologist official. In organizations having more than one qualified psychologist, the individual with tenure in clinical psychology services is to have selection priority over military or civilian rank or grade seniority status. Civilian consultants are not eligible for this appointment.
4. In order to monitor and coordinate psychologist official resources within the Army health services regions and areas, MEDCEN/MEDDAC with qualified - psychologist assigned will officially designate, in writing, an individual with the additional duty of "psychologist official." Written appointment designations will include:
 - a. Name
 - b. Grade/rank
 - c. Primary Specialty Skill Identifier (PSSI) and Additional Skill Identifier (ASI) where applicable for military personnel or General Schedule (GS) Occupation Series Number for DA civilian personnel.
 - d. Assigned duty position title
 - e. Individual's office address
 - f. Individual's office AUTOVON number(s).

17 JUL 1984

HSCL-C

SUBJECT: Appointment of Psychologist Official

5. A copy of the written appointment will be forwarded to this headquarters, ATTN: HSCL-C/Psychology Consultant.
6. If it becomes necessary to appoint a new "psychologist official," the same procedures as stated in paragraphs 4 and 5, above, will apply.
7. Negative replies are required. Please provide the name and AUTOVON number of a point of contact for future coordination when either of the following circumstances exist:
 - a. No qualified psychologist is assigned or detailed to the organization.
 - b. Extended vacancy (greater than 30 days) of a qualified psychologist occurs or is anticipated.
8. Any questions pertaining to this subject are to be directed to local MTF psychologist, MEDCEN regional psychology consultants, or to the HSC Psychology Consultant, LTC Gillooly, AUTOVON 471-7094/7095.

FOR THE COMMANDER:



R. O. GRAY
Colonel, AGC
Adjutant General

CF:

HQDA (DASG-PSC), WASH DC 20310

HSC Regulation 40-3: Notes From A Consumer

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Abstract

Psychological testing has proven to be potentially helpful and harmful. The utility and social impact of psychological tests has been the focus of numerous debates. A review of the history and literature suggests that psychological testing, in both the civilian and military sectors, remains largely an unregulated professional activity. As a result, the courtrooms are not at a loss for cases dealing with the misuse of psychological tests. One breakthrough on this problem occurred in 1984, when all Department of the Army units under the jurisdiction of Health Services Command received a newly drafted regulation identified as HSC Reg 40-3 and titled The Use And Control Of Psychological Test Materials. The following paper reviews some of the assets and liabilities of the regulation, discusses the possible difficulties involved in its implementation and speaks to its potential impact on the practice of professional military Psychology.

Psychological testing has been one of the most successful enterprises in applied professional Psychology. It is an endeavor which has been closely scrutinized and is much in the news these days (Haney, 1981). Psychological tests have been shown to be both helpful and harmful. They can be used to identify potentially hidden areas of skill and strength. Yet, people have argued that the same tests have been used to limit their life chances and opportunities. The heated discussion on the utility and social impact of psychological tests currently taking place in the newsmedia, universities and courtrooms will not be extended here. Instead, this paper focuses on the control and regulation of the process of data-based psychological evaluations with particular emphasis on a new regulation governing the use and control of psychological tests within the Army Medical Department.

There is little argument that a Psychology test report on personality, intellect, emotional functioning and adaptability can be a highly sensitive product. Tests used by psychologists and the results that emerge from testing evaluations could conceivably be more invasive and produce longer-lasting effects than a scalpel used by the physician during surgery. Intuitively, one suspects that the process of data-based psychological evaluations and testing would be strictly controlled and regulated by

professional documents and legal statutes. The following brief historical review of the general regulation and control of psychological testing suggests otherwise.

The involvement of professional societies in testing began in 1895 when the American Psychological Association formed its first committee on mental measurement. Although the level of attention within APA remained high during the 1920's as a result of vigorous criticism of testing, no concrete action to monitor, limit or review individual professional activity resulted (Novick, 1981). In fact, in 1923 an APA committee recommended certification and monitoring of nonpsychologists' use of tests, but the membership defeated the motion (Novick, 1981). Some effort to improve the safeguards and quality of psychological tests came about with the publication of the Mental Measurements Yearbook (Buros, 1938) and later with the 1954 APA publication titled Technical Recommendations for Psychological Tests and Diagnostic Techniques. The most current, authoritative professional documents guiding the use of psychological tests would be the American Psychological Association's Ethical Standards of Psychologists and the Standards For Educational And Psychological Tests, a joint effort of the American Psychological Association, American Educational Research Association and the National Council on Measurement in Education (1974). As comprehensive and well-wrought as these documents are, the current status with regard to the legal use and control of psychological tests in America continues to remain a little to the left of a "free-for-all."

The recommendations of professional organizations are not always translated into law. It is true that some of these recommendations and ethical standards have been incorporated into many of the state Psychology licensing laws (London and Bray, 1980), and in fact, most test publishers confirm the credentials of potential test purchasers prior to shipment. Yet, it would be difficult to identify a single activity in professional psychology (including psychological testing) that could not legally be accomplished by a bartender. For the proper fee, a poodle could probably acquire a computerized Rorschach assessment. The public deserves more than this. Fortunately, there has been a breakthrough, at least within the Army Medical Department, that is likely to ameliorate this situation.

In May of 1984, all Department of the Army units under the jurisdiction of Health Services Command received a newly drafted regulation identified as HSC Reg 40-3 and titled The Use And Control Of Psychological Test Materials. HSC Reg 40-3 is a broadly based document which not only defines the process of data-based psychological evaluations as a professional health care function, but specifies the credentials and training required to be an independently functioning military psychologist or test user. Few words are as sweet as those found in paragraph 5c of HSC Reg 40-3:

"Only qualified psychologists, de facto as a group, are authorized to conduct and supervise psychological testing. Psychological tests are administered, scored and interpreted only in situations having the professional supervision and accountability of a qualified psychologist."

Miscellaneous record reviews and verifications

When the "cause for inquiry" includes various data contents and reports from clinical records/charts, these are reviewed for authenticity and factual substance. In order to obtain what record features are locally "usual and customary," a random sample of past records of other psychologists is obtained to select which of the various specialty peer review criteria are to be applied.

Another random sample of records is drawn, this time of those of the subject psychologist, and these are reviewed applying the selected administrative and clinical content requirements criteria. Administrative features may include proper patient identification, practitioner's signature block, etc.; and professional content items may include general organization of the reports, proper use of diagnostic nomenclature, referral question response, disposition and recommendations, to name a few.

Also, it is important to accomplish document authentication and/or telephonic verification of formal degree attainment, training, and current licence and certification status.

The investigation report

While verbal report of the investigation may be required and accepted during the outbriefing with the Chairperson of the Committee, formal and final written reports have been submitted to this Chairperson as a "Memorandum of Record" with the Subject being, for example, "Appraisal of Professional Qualification, Technical Specialty Performance Competency, and Credentialing of Clinical Psychologist."

The formal report should include pertinent reference citations; an authority and direction statement; any definitional clarifications; a listing of sequential procedures and methodology used in the investigation; definitive and factual findings which highlight background factors, results of reviews, and other noteworthy items; conclusions; any brief discussion; and recommendations regarding credentials and clinical privilege status, remedial or re-educative measures, and operational and technical supervisory controls. It should be realized that neither the Committee nor the commander is bound by any aspect of this report. Finally, while various findings of the inquiry may have been discussed in the process with the practitioner along the way, the subject psychologist has been referred to the Chairperson of the Committee regarding access to, and release of, any reports.

General Psychology Clinic QA Criteria

During recent Annual General Inspections and JCAH Inspections of Psychology or Community Mental Health Service outpatient clinics, visitors have

Parenthetically, it is critical that the investigator be thoroughly familiar with, and knowledgeable of, both pertinent Army, HSC, and local MIF regulations and professional ethics principles, specialty standards and guidelines of practice, and related literature.

reliminary document reviews

In addition to review of any acquired reports bearing on the "cause for inquiry," which may include Reports of Unusual Occurrence, reports of chart audits, interview transcriptions, to name a few, the investigator next should review the following:

- (1) The psychologist's Military Personnel (Field) File or Civilian Personnel File, as appropriate.
- (2) The Psychologist's Practitioner's Credential File, including materials forwarded from previous MIFs.
- (3) Any reports of Departmental or Service audits of records of the care rendered by the psychologist.
- (4) The "Duties and Objectives" sections of the most recent Officer Evaluation Report Support Form (DA Form 67-8-1) of the psychologist; or the Job Description and Critical Elements of the Performance Rating, if civilian.
- (5) Past Clinic Visit workload data of the Service to which the psychologist is or was assigned.
- (6) The Standing Operating Procedures of the Service to which the psychologist is or was assigned.

personal interviews

The initial contact with the subject psychologist is made to inform him/her regarding the authority and focus of inquiry, that his/her participation is voluntary, and that the investigator has the obligation to submit an inquiry report. And, if the psychologist voluntarily wishes to make comment, his/her general perspectives of the situation are solicited. Subsequent arrangements have been made to observe the subject practitioner "in situ" conducting whatever professional function(s) are in question. This may include the performance of a clinical evaluative interview or other assessment applications, the clinical staffing of intervention cases, or observation, review of audio/visual tapes. Additional interviews are arranged with all available previous and current technical supervisors and with individuals of the professional's existing and past rating schemes.

Developing Methodology for Investigating Psychologist

The Inbriefing

At the outset, it is important to obtain verbal or written authority and direction, from the Chairperson of the Committee or Deputy Commander for Clinical Services to undertake an investigation of subject professional employing review of any and all administrative, personnel, and clinical records and documents, and conducting inquiry interviews and discussions with subject provider and his/her past and/or present principal supervisory individuals.

Additionally during the initial briefing, it is crucial to ascertain, in fact, whether any of the following events have occurred or exist:

- 1) Has the psychologist been informed of the investigation?
- 2) Has the psychologist rendered formal application for clinical privileges and credentialing?
- 3) Has the psychologist's application for privileges been officially approved?
- 4) If the psychologist is officially credentialled, what is the current and actual status (category level; temporary, provisional, permanent; restrictions, suspensions)?
- 5) Have any formal counseling statements been rendered?
- 6) Have any non-judicial punishments, disciplinary or other UCMJ actions been initiated or rendered?
- 7) Have any complaints been filed with state or national Psychological Associations Ethics Committees?
- 8) Have any patients or staff been injured or harmed?

The investigator should also make known that the general modus operandi and operational definitions to be used during the inquiry process are to be in accordance with official directives and further derived from published professional and specialty policies of psychology. For example, the elements of a "Clinical Psychology Service" and "Professional Clinical Psychologist" are defined from the Specialty Guidelines for Delivery of Services (APA, 1981). And the criteria to be used in peer review is the established practice or service that is "necessary and appropriate" and/or "usual and customary." Also, that "professional competence" is to mean, in brief, the adherence to standards of practice established by the profession and specialty. And finally, while the requesting IIR may have other concerns and actions underway and pending about the subject of inquiry, the investigation is to be delimited in scope to, and address only, professional service provisions of practice.

Yet, on the other hand, there should be no misunderstanding that the status of an independent health care provider, of an autonomous profession, does not equate to relief of collegial accountability and supervisory guidance. In the profession of psychology, the maintenance of high standards of competence is a responsibility shared by all psychologists. The other items of Principle 2, Competence, of our "Ethical Principles" are also very relevant.

Performance Appraisal Coordination

As was mentioned earlier, the evaluations, restatements, or modifications of privileges are to be based upon education, training, experience and through appraisal of clinical performance. Such appraisals, while ongoing locally, also may be intensified when adverse information about a provider is brought to the attention of the Credentials Committee. The HHC commander has the approval and directive authority to undertake these formal investigations. Typically, the Chairperson of the Committee is delegated coordination responsibilities to effect these kind of inquiry.

Over the past couple of years, several Committee Chairpersons have contacted the Deputy Chief of Staff for Clinical Services at HSC to request both guidance and formal investigation assistance from the HSC Psychology Consultant, when adverse information about psychologists had been received. At first contact, particular determinations were made by the Psychology Consultant regarding which area(s) of clinical psychology services functions (e.g., assessment, intervention, consultation, or supervision) were involved, which particular specialty procedures or privileges were at issue, and which patient age or population groups (e.g., child, adult) were related to the concerns. This information is necessary for the consultant to be able to judge whether (s)he is personally knowledgeable to render comment or assistance. If the area of needed assistance falls outside the domain of expertise of the consultant, referral to other available specialty resources in psychology should be recommended.

Once the problem areas are determined to be within the consultant's specialty domain and a formal technical specialty investigation officer is requested, administrative coordination between the requesting command and the consultant's command is needed (e.g., release from assigned duties, authority for temporary duty, fund citation, etc.). During past occasions, the respective Deputy Commanders for Clinical Services were the formal points of coordination contact, and the requesting command has provided the necessary fund citation for Temporary Duty expenses.

After intercommand coordination and arrival on site, the investigating officer (or consultant) reports for duty to the requesting Deputy Commander for Clinical Services. The visiting officer is, in effect, "working for" the Chairperson of the Committee as a consultant to the professional "side of the house."

Another reason for which elimination is authorized involves "Misconduct, moral or professional dereliction." This may include: "the intentional omission or misstatement of fact in official statements or records, for the purpose of misrepresentation; the intentional neglect of or failure to perform duties; or finally, conduct or actions resulting in the loss of professional status, such as withdrawal, suspension or abandonment of professional license, indorsement, or certification which is directly or indirectly connected with the performance of one's military duties and necessary for the performance thereof, including withdrawal of clinical privileges for AMEDD officers."

The business of applying for clinical privileges, performance reviews, and credentials approval is indeed a very serious matter from the very "get-go" beginning through to our very daily practices.

It was during the author's attendance at the "Medical-Legal Symposium," presented by the Department of Legal Medicine of the Armed Forces Institute of Pathology at Brooke Army Medical Center in September 1984, that a number of related ideas were discussed (Fiscina, 1984). For example, in evaluations of clinical incompetence, there is usually a failure to make a distinction between competence and performance. Inadequate practitioner performance (i.e., the failure to meet a satisfactory standard in doing a clinical task) does not ipso facto equate to practitioner incompetence. Clinical competence refers to a professional's capacity to perform a particular clinical task in an acceptable manner. Actual performance may fall short of acceptable standards for reasons unrelated to what has been thought of as incompetence. Laziness, pressures of multiple activities, distractive inattention, or socio-economic factors may also influence adequate performance. It may be these kinds of matters, not a lack of capacity to perform a clinical task, that causes discrepancies and failures in practice.

Competence was to be viewed and assessed in relation to the tasks undertaken. Clinical competence relates then to the sufficiency of a practitioner's qualifications to deal with the clinical issues in question. It supposedly involves the ability to use knowledge and skills effectively in the patients' best interest. It also includes an understanding of relevant clinical principles and adequate knowledge of the practices and procedures by which these principles are effectively applied. Yet, technical knowledge and proficiency, and confidence or virtuosity, is not all that counts. Competent professional service must also involve an ethical disposition, proper work habits, and an awareness of the extent and limits of what tasks can be handled alone and what tasks require the assistance of other health care providers.

One additional batch of notes is worth highlighting here also. Realistically, no professional, who by definition should be capable of practicing independently, can be monitored continuously and contemporaneously in daily work. Professional conduct matters must be internalized. It was felt that a system of "investigation or inquisition," predicated on general suspicions of incompetence and mistrust of practitioners' inclination to meet professional standards, will ultimately reduce the motivation of practitioners to do their best and to censor their own performance.

In point of fact, there are two separate arenas of authority to which we are responsible. On the civilian side, outside the AMEDD, state and national psychological associations may become involved for individuals who are members of APA and/or who are licensed or certified by states. Procedures follow CSPEC operating rules through complaint processing, inquiry and investigations, and adjudication and appeal stages, and in formal and informal dispositions and sanctions.

Within the AMEDD, AR 40-66, regarding "Medical Record and Quality Assurance Administration," especially Chapter 9, provides definitive guidance for, among other topics, directed inquiries and formal hearings, dispositions and recommendations, the appeals process, and review and approval action, when clinical performance evaluations and appraisals result in clinical privilege modifications.

Information about the lack of professional conduct or incompetence of any practitioner which is or may be detrimental to patient health or safety should be given to the Credentials Committee for review and action. Again, this type of information or allegation may come from a variety of sources. When a practitioner's conduct requires action to protect the health and safety of any patient or future patients, employers, or others in the MTF, the Chairperson of the Committee or hospital commander will restrict or suspend all or part of the clinical privileges of the practitioner. This is called a "Summary restriction or suspension of privileges." If a patient's welfare is immediately threatened, the Chief of Department or Service in which the practitioner is assigned can have the same authority. Subsequent procedures for "Summary" restriction/suspension are stipulated further in AR 40-66.

When adverse information is submitted to the Committee, and summary action is not appropriate, "Routine" review actions are initiated that may also result in privilege restoration, full or partial withdrawal, restriction, suspension, or termination. The Chairperson of this Committee may investigate further or may designate an officer to do so, if more informational background regarding the conduct is necessary. Any uniformed psychologist may be designated to do an investigation. This investigation is not a hearing; but may include voluntary consultation with the practitioner, review of relevant documents, or discussion with other persons having knowledge of the conduct at issue. When the investigation is complete, a report is made by the inquiring officer to the Committee. This report is not binding on the Committee or on the MTF commander. Provisions to insure a "fair hearing" and "due process" are elaborated further in AR 40-66.

It is of critical necessity that mention also be made of AR 635-100, regarding "Officer Personnel Separation," in light of adverse ethics evaluations and performance competency appraisal actions. In general, what is said is that the retention of officers who are substandard in performance of duty . . . (or) wanting in professional qualifications or status . . . cannot be justified in peace or war. Substandard performance of duty includes the existence of a "failure to assimilate technical proficiency required of his/her grade" or a "failure to discharge properly assignments commensurate with his/her grade and experience."

Ethics and Peer Reviews

The last paragraph of the Preamble of the Ethical Principles of Psychologists states:

Psychologists cooperate with duly constituted committees of the American Psychological Association, in particular, the Committee on Scientific and Professional Ethics and Conduct, by responding to inquiries promptly and completely. Members also respond promptly and completely to inquiries from duly constituted state association ethics committees and professional standards review committees (APA, 1981, 633).

Numerous and very informative articles have been published over the past couple of years to educate us about, and explain, the informal and formal adjudication procedures taken by APA Committee on Scientific and Professional Ethics and Conduct (CSPIC), when complaints against psychologists are received (Hall & Hare-Mustin, 1983; Hare-Mustin & Hall, 1981; Mills, 1984; Sanders, 1979; Sanders & Kieth-Spiegel, 1980). The CSPIC of APA also has published an updated version of its Rules and Procedures in February 1983.

In regard to peer review matters, the APA's Committee on Professional Standards published a "Peer Review Manual for Providers of Outpatient Psychological Services" in June 1983. This interim manual is planned for expansion to an eventual comprehensive Provider Manual.

The process and pitfalls of psychologists developing and administering a peer review system is elaborated by Theaman (1984), who explains criteria set by our profession to determine whether services are "necessary and appropriate" and "usual and customary." The responsibility of peer review "is not to set standards for the profession but to monitor adherence to standards the profession sets for itself" (p. 412). The review is basically to represent the best judgment based on literature knowledge, on experience, and on acquaintance with customary practices. Theaman concluded by commenting that: "Peer review makes collegial accountability a continuing presence in professional practice." He recommends that: "Long before any case may be referred for review, we may be asking ourselves, 'What would my colleagues think about how I am proceeding in this case?'" (p. 414).

One of our goals in ethics and peer reviews of psychologists would be to insure, when questions are raised regarding psychological practices and service delivery, that provisions are made for psychologists to be involved as reviewers in any and all evaluations, inquiries, investigations, and hearings that result. Allegations of ethics complaints, impropriety, misconduct, and others may enter established review systems from at least two sources: from individuals or agencies within the AMEDD treatment facility system, or from individuals and agencies outside the AMEDD. You should realize that coexisting separate review mechanisms may possibly be operating at the same time. APA and/or state review committees may be working on the same or other matters at the same time; and, in addition, the AMEDD Credentials Committees may be proceeding to make review investigations and clinical privilege determinations.

It is common procedure for newly arrived practitioners to be evaluated during a "Provisional Status" period of time before full "Appointment Status" is approved. Evaluation of privileges is an ongoing process and is completed at least annually. Evaluations, reinstatements, or modifications (extensions or restrictions) of privileges are again to be based upon education, training, experience and thorough appraisal of clinical performance. If you have any questions about how, when, and where to take care of these matters, direct or written contact should be made with the Committee offices of the departing and gaining MTFs. The delineation of privileges, whether renewed or modified, are to be "reviewed by the chief of the clinical service" (*italics added*) and the Committee and approved by the commander. The issues of clinical privilege restriction, suspension, or termination will be discussed shortly.

What kinds of clinical privileges are being sought by AMEDD psychologists? The author has had the opportunity to review and comment on numerous listings of privileges on credentials applications, while functioning as Psychology Consultant to the Deputy Chief of Staff for Clinical Services of Health Services Command. It has been noteworthy that psychologists are beginning to include a general reference to "privileges outlined in the Standards for Providers of Psychological Services, the Specialty Guidelines for the Delivery of Services by Clinical Psychologists, and the Ethical Principles of Psychologists (all APA publications) to include evaluation, treatment, consultation, referral, training/teaching, supervision, and research privileges." Table 1 presents a sample listing of possible privileges used by psychologists. Depending on local needs the clustering of privileges may take on different forms, language, and headings; and therefore, this illustration cannot be construed to be reflective of any set policy.

Insert Table 1 about here

To insure that no system's misunderstandings are perpetuated, psychologists are making clear and definitive statements that their request for privileges "specifically exclude medical decisions and care pertaining to pharmacological management, physical examinations, and related physiological management," and that "close consultative relationships will be maintained with physicians (attending and/or consulting) in order to insure medical care as needed."

It should be noted also that each clinical specialty within the AMEDD has been tasked to establish general credentials qualification criteria, for as many specific privileges as necessary. These will address educational, training, experience, and certification factors; and such an effort is well under way at this time.

criteria for Community Mental Health Services (or Psychology Services) Clinics. A glossary of frequently used terms has been derived by the author and is provided at the end of the paper for your use and reference (See Appendix A).

Clinical Privilege and Credentialling

Among the host of necessary actions involved in a full-scaled QA program (including numerous types of patient care evaluations, utilization reviews, risk management provisions) lies the determinations and approval of staff membership, qualification credentials, and the delineated clinical privileges.

Under the new JCAH hospital accreditation policy and standards, which took effect on 1 January 1985, there will be acknowledged a single organized medical staff that includes physicians. In addition, "at the option of the hospital, the staff may include other licensed individuals permitted by law and the hospital to provide patient care services independently (without supervision or direction)." The formal granting of appointments to membership in a staff category with specific clinical privileges in a hospital involves preliminary and recurring evaluations and recommendations of a locally established Credentials Committees. The commanders of the Medical Centers or Medical Department Activities are the final approving authority of these actions.

When psychologists are first (and subsequently) assigned to a Medical Center (MEDCEN) or a Medical Department Activity (MEDDAC), they are to submit a letter of application to the Credentials Committee (hereafter called, the Committee) for clinical privileges, wherein is stated a reasonably comprehensive delineation of privileges wanted (and for which s/he is qualified). The medicolegal experts suggest that the burden is on the applicant to establish that he or she qualifies for medical staff appointments and clinical privileges. The Committee makes a decision of initial privileges based upon education, training, experience, demonstrated competence, and certifying examinations. These actions are forwarded to the Commander for approval and become part of the Practitioner's Credentials File, which is secured and maintained by the Chairperson of the Committee.

The Practitioner's Credential File (File # 912-04) includes application material, follow-up letters, and information judged pertinent by the Committee. It is the practitioner's responsibility to insure that the file meets the requirements of the professional specialty with which s/he is affiliated. Possible File inclosures would be conferences attended (subject and date), lectures given (subject and date), papers published (subject and date), special activities (e.g., research), and examinations taken (e.g., certification) and results. You should be aware also that this file is to be released only to the medical treatment facility (MTF) Commander, the Committee and reviewing authorities; and the practitioner may authorize releases other than these. The file is to be kept for the military practitioner's entire service career. On change of station, the Committee of the losing MTF forwards the file to the Commander of the receiving MTF.

presses in volumes during the last couple of years. In fact, the journal, Professional Psychology, in February 1982, totally devoted its special issue of twenty-four articles to the topics of QA and PR, and is encouraged reading.

While it is true that our civilian counterparts have been perhaps more preoccupied and vociferous about the various aspects of PR matters as they specifically pertain to the "paperwork" that satisfy third-party payer review requirements for individual case reimbursements, the Army Medical Department (AMEDD) psychologist practitioners have been able to contribute to the development of their own local, "within-house" means for routine checks and audits of care quality. However, there is no personal remunerative payoff for making sure that our efforts in care quality appraisal meet standards or comply with professional guidance. Nevertheless, military psychologists continue to act responsibly in conformance with ethics application and practice standards.

By now at most of our work settings, audit criteria have been locally established to monitor records for essential administrative and clinical content features. These documentation reviews have focused on accuracy, timeliness, completeness, clinical pertinence, and adequacy as medicolegal documents. However, except at those locations where more than one psychologist is assigned, routine PR consultation, and supervisory interrelation efforts, among psychologists are rarely arranged.

It is the rule rather than exception that individually most psychologists are continually involved in self-assessment of their clinical knowledge and judgment as well as in undertaking literature studies and attending workshops and conferences to remain current and upgrade themselves in self-identified areas needing attention and growth. State certifications and/or licensure and listing in the National Register of Health Service Providers in Psychology are being attained and retained. And increasingly more practitioners are seeking diplomat status from American Boards of Professional Psychology in clinical and/or hypnosis areas as well as in the areas of family and marital therapy and neuropsychology. Multiple subspecialty skill developments are being pursued and used. And many capable and talented psychologists are acquiring reputable credentials and are being granted clinical staff privileges across community hospitals and medical centers worldwide within the AMEDD.

More than ever before, AMEDD psychologists need to gain appreciation and become increasingly acquainted with how the ever-growing QA program impacts on their clinical practice. From clinical privilege application, through credentialing approval, records audit, peer review, to clinical performance appraisal, psychologists need to develop acceptable ways to proceed to insure both the welfare of patients and the best interest of fellow practitioners, our career field, and our missions. With this focus in mind, a selective elaboration of topics follows which refers to: clinical privilege acquisition, APA recommendations for ethics and peer reviews, formal command actions when provider deficiencies are alleged, a developing methodology for evaluating clinical performance of psychologists, and general QA practice

Quality Assurance Programs and the Practice of Psychology in
Clinical Settings: A Focus on Initiatives and
Directions in Army Medical Department
Health Service Delivery*

LTC David H. Gillooly, Ph.D.
Brooke Army Medical Center

Abstract

With increasing emphasis and directives about Quality Assurance (QA) issues, Army Medical Department psychologists, functioning within Health Services Command, need to be generally aware of how QA program efforts may impact on their clinical practice. From clinical privilege application, through credentialing approval, records audit, peer review, to performance competency appraisal, little in the way of professional guidance is officially documented as a preferred or acceptable manner to proceed to insure the best interest of patients, fellow practitioners, our career field, and our organizational missions. This paper refers to relevant QA definitions, outlines formal command actions when individual provider deficiencies are alleged, presents an overview of American Psychological Association recommendations for ethics and peer reviews, and details a developed methodology that has been employed when formal evaluations of the performance competency of psychologists have been requested by clinical services authorities of medical treatment facilities within Health Services Command.

Introduction

In professional psychology the analysis and assessment of service quality is not new and is filled with rich tradition, stemming from the "tried-and-true" case conference and senior practitioner or colleague supervision methods, and more recently from problem-oriented records procedures. In more recent times the terms, "Quality Assurance (QA)" and "Peer Review (PR)," have taken on rapid pace significance and explosive developments, in both the civilian as well as military health care systems, in terms of attempts to determine adequacy of present clinical activity and to assure an acceptable level of quality of future services.

Ever since July 1977, the American Psychological Association (APA) has been developing national professional policy and guidance to employ peer review as a quality assurance tool in the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) of the Department of Defense. It should be noted that, even ten years prior to CHAMPUS concerns, Professional Standards Review Committees had already been in place and functioning at APA and state levels. Pertinent literature for psychologists have been rolling off the

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kind of uneven implementation and lack of uniformity that may result in certain individuals becoming somewhat less receptive to this new regulation. It would behoove Army psychologists to conform as closely as possible to the guidelines of HSC Reg 40-3 and to keep abreast of developments at other posts through discussion with our colleagues.

A second area of concern lies in the ability of this regulation to generalize outside of Health Services Command. Part of the regulation provides an avenue of staff level influence in those instances of test use outside the Medical Treatment Facility. The Director of Health Services (usually the MEDDAC/MEDCEN Commander) in conjunction with the delegated Psychologist Official can draft local policy statements controlling psychological testing installation-wide, but formal guidance on the process seems to be lacking. Also, Health Services Command is but one of many commands within the Army Medical Department. Certainly, these other commands would be expected to follow precedent, but a certain bit of ambiguity remains. Gains could be made in both areas if HSC Reg 40-3 was translated into Army Regulation.

A third concern lies in the notion that nonpsychologists may be puzzled and resentful of new psychological testing procedures and the required review process. Psychology is not so big that it can't be ignored, and previous popular referral sources may ultimately come to consult Psychology less frequently. Of course, as sole-source providers of psychological testing evaluations, a balance might be achieved with a flurry of new consultations from sources (ie. the legal system) who previously availed themselves of Psychology services indirectly (ie. through Psychiatry).

Fourthly, it is probable that nonpsychologists will less aggressively enforce HSC Reg 40-3. It is here that psychologists may find themselves compelled to function in a non-traditional role--that of policemen. The hope is that psychologists will keep in mind that implementation of the regulation is vital to our profession and our patients. Enforcement may be easier if it is presented as in the best interest of all parties concerned. Army psychologists are clearly obliged to maintain the integrity of this regulation.

Psychology as a profession is not without its moments of defensiveness and low self-esteem. An occasional rereading of HSC Reg 40-3 should be enough to recharge the inspirational batteries of any military or civilian psychologist. Although the fundamental thrust of the regulation is to protect patients and the U.S. Army from unqualified users of psychological data, it appears that HSC Reg 40-3 may also offer the potential for professional military Psychology to accrue significant political benefits secondarily. It is possible that it provides a regulatory model for the use and control of psychological tests on which the civilian sector could build.

The regulation delineates the credentials necessary to be considered a qualified psychologist. Uncredentialed U.S. Army 68 series personnel presenting themselves as psychologists are likely to have significant difficulty functioning autonomously and implementing this regulation, and this is a disservice to the profession and to the people we serve. The hope would be for this regulation to spur on those individuals to become credential-eligible, and also to exert upward pressure on Washington to non-select for active duty, individuals with incomplete training who are not "qualified psychologists."

This regulation also carves a formal place for professional Psychology in Medical and Sanitary Board proceedings, Credentials Committees and Quality Assurance Programs. It calls for the psychologist official to review all health care, legal and administrative correspondence incorporating psychological test studies. The official must also review the credentials of all those who apply to be credentialed to conduct data-based psychological evaluations. In an effort to promote familiarity with the effects of the regulation, psychological reports do not leave the office of this author without the typed statement "No part of this report can be revealed verbally or in writing to a third party without the written consent of the undersigned or the MEDDAC Psychologist Official."

Leaving no stone unturned, HSC Reg 40-3 anticipates the potential flagrant patient care abuses that are likely to occur in the ever expanding world of computerized psychological assessment. Health Services Command wisely protected patients and the Army Medical Department by directing Psychology, the profession specifically trained and specialized in psychological assessment, to direct and control all computerized testing programs.

Another issue addressed indirectly by the regulation concerns the few remaining stalwarts who argue that professional Psychology requires physician supervision, a position contrary to that of all U.S. Supreme Court decisions on the matter. This position would seem difficult to defend, given that there now rightfully exists a professional activity which explicitly cannot be supervised by other than Psychology. Generally, the strengths of this document are too numerous to mention. However, the regulation raises a few issues which slightly concern me.

There are possible problems associated with an inconsistent implementation of the regulation between installations, difficulties with generalizing the regulation to areas outside of HSC jurisdiction, the possibility that Psychology may become less frequently consulted, and the dilemmas that may arise when psychologists find themselves as a result of this regulation thrust into a new role--that of policemen. Many of our nonpsychologist colleagues may be puzzled by the restrictions on testing and the expanded role for Psychology outlined in the regulation. Whenever a new issue arises, it is not uncommon for personnel to place a phone call to determine the status of a policy at another installation. For example, it may be determined that Medical Board Evaluations containing psychological test studies never pass through Psychology for final review, or that a psychologist assigned to a Community Mental Health Activity doesn't keep separate Psychology files to protect the test data and reports. It is this

been asking questions about: Under what circumstances are patients accepted into the Service and what methods have been established to insure both proper medical referral collaboration and continuity of care? These matters raise justifiable concerns, when one realizes that many psychological signs and symptoms may be correlates of ongoing physiological disease processes. As responsible practitioners, we must be always careful to insure that patients receive medical attention or clearance before, or in conjunction with, our professional efforts. Appendix B presents some QA criteria suggestions for a Community Mental Health Service that addresses these general matters, and that may be incorporated into Standing Operating Procedures.

Conclusion

Any psychologist, functioning as Area or Regional Health Services, or Major Command, Psychology Consultant, may be called upon to assist the QA programs for our professional specialty. This expose has been provided with the hope that some of its ideas are informative and useful to you, as we continue to respond and develop ways to maintain our traditional high standards of practice.

Footnote

*Statements herein reflect only the private views of the author and are not to be construed as official or as necessarily reflecting the views of the Department of the Army or the Department of Defense.

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Appendix A

Glossary of QA Terms

Appointment: The formal granting of membership in a staff category with specific clinical privileges in a hospital.

Attending staff: Physician, dentist or other qualified practitioner, such as psychologist, who is a member of the organized staff with privileges to serve as the primary care provider or case manager.

Clinical privilege: Authorization by the commander to render patient care and treatment services in the facility within well-defined limits, based on the individual's professional qualifications, experience, competence, ability and judgment. Individual clinical privileges are delineated for all health care practitioners who are practicing independently and who are directly responsible for diagnosis, treatment, and disposition of patients.

Consultant: A health care provider who gives professional advice or services on request. A consultant must be well-qualified in his/her field, and his/her qualifications are determined by the Credentials Committee.

Consultation report: A document that includes those matters which the requesting practitioner sought an opinion on, and the consultant's findings and recommendations.

Credentials: Documents that support a practitioner's training, supervision, and experience. These materials are used to determine specific staff categories and clinical privileges.

Credentials Committee: One of the various committees formed to assist the MEDDAC/MEDCEN commander in discharging authority and responsibilities for an ongoing Quality Assurance Program. It appraises qualification credentials, recommends to the commander delineated clinical privileges of MTF personnel, privilege changes, and any other quality of care evaluations.

Incident reports: Documentation of events or actions that are likely to lead to adverse effects and/or that vary from established policies and procedures pertaining to patient care.

JCAH: Joint Commission on Accreditation of Hospitals is a private, non-profit corporation developed for the purpose of setting standards for hospitals.

Medical staff: A formal organization of practitioners with the delegated responsibility and authority to maintain proper standards of care and to plan for continued betterment of that care.

Patient care assessment: A review of medical records and other appropriate sources to evaluate the quality of patient care. It includes:

(1) Assessment criteria, problem identification, and corrective actions; (2) Documentation review of medical records for their accuracy, timeliness, completeness, clinical pertinence, and adequacy as medico-legal documents; (3) Review of specified treatment-related cases; (4) Other audits and reports like tissue reviews, anesthesia and necropsy reports, blood use, and drug use; and (5) Consultation reviews.

Peer review: A service provided by professional associates to check into the evaluation and treatment goals and processes, and to establish that evaluation and treatment is medically/psychologically customary, necessary, and appropriate.

Provisional appointment: Most privileges or staff appointments are granted on a provisional basis for a specified period of time. During this time, the Credentials Committee and other staff members can review the performance of the provisional member. At the end of the time period, a decision is made to move the practitioner to regular status in one of the staff categories.

Risk management: This is concerned with accident and injury prevention and the lowering of financial losses after an incident has occurred. It involves identifying problems or potential risk circumstances that must be eliminated or reduced to prevent accident or injury. A "Report of Unusual Occurrence," that describes any incident or event not consistent with normal patient care that either did, or could result in an injury to a patient, is one of the tools that is used in a Risk Management Program and may be referred to Medical Claims proceedings.

Shall: Used to indicate a mandatory standard.

Should: Used in a standard to indicate the commonly accepted method of compliance.

Staff privileges: Specifically delineated and granted privileges to provide care. These are usually requested by the practitioner, reviewed by a Credentials Committee, and granted or denied privilege by privilege.

Utilization review: The process of using predefined criteria to evaluate the necessity, appropriateness, and management of allocated health services and resources to assure that services are necessary, cost efficient, and effectively utilized. It includes appropriateness of admission, services ordered or given, length of hospital stay, hospital discharge planning and practice, and outpatient services.

Appendix B

Quality Assurance Criteria

Community Mental Health Service

I. Criteria for patient entrance to CMHS for evaluative services.

- A. For referrals from unit commanders and official agencies: 100%

Written formal request from official of command/agency is made available prior to evaluation.

- B. For referrals from DOD medical clinics, services, department, Activities:

Receipt of Consultation Sheet (SF 513) or comparable correspondence. 100%

- C. For self-referrals of active duty military personnel or dependents:

Completion of CMHS, Initial Personal History Questionnaire, (BAMC Form 76), and Privacy Act Statement (DD Form 2005). 100%

II. Criteria for patient entrance to CMHS for outpatient treatment services.

- A. Patient is evaluated by CMHS staff as having a diagnosed "mental condition," using criteria of DSM III, and patient agrees to comply with treatment plan. 100%

- B. Excludes patients meeting criteria for inpatient psychiatric treatment, or ASAP medical evaluation. 100%

III. Criteria for initiation of referral to inpatient Psychiatry Service. 100%

- A. Persons evaluated by CMHS professional staff to be:

1. Potentially dangerous to self, others, or property; or
2. In need for continuous skilled observation or therapeutic milieu; or
3. Posing unusual outpatient management difficulties.

- B. Persons being legally mandated to inpatient evaluation/care.

IV. Criteria for ASAP medical evaluation.

100%
(All incidents)

A. Patients presenting with:

1. Clouded or lethargic consciousness, or
2. Disorientation, or
3. Gait disturbance, or
4. Aphasic signs.

B. Patients admitting to ingestion of:

1. Toxic agents, or
2. Pharmacological agents in excess (or without) prescription.

C. Patients complaining of any of the following events, not medically evaluated:

1. Recent onset of any pain, or
2. Recent injury, or
3. Altered sensorium, or
4. Extremity/gross weakness or limited range of motion, or
5. Fainting or breathing difficulties/irregularities, or
6. Chest pain, or
7. Urinary or fecal incontinence, frequency, or
8. Vomiting, or
9. Bleeding, or
10. Persistent dizziness/nausea.

V. Criteria for continuity of medical care.

A. Psychiatric Care

100%

A copy of Psychiatry Service narrative summary is received at CMHS for:

1. Individuals originally referred by CMHS to inpatient psychiatric care, or

2. Soldiers discharged from hospital and returned to duty with assignment to installation tenant units.

B. Other medical collaborations

100%

1. Notation is made in the Military/Civilian Consultation Case Files to verify that individual's Outpatient Records have been annotated about the CMHS contact: especially, when the "Medical History" section of the CMHS Initial Personal History Questionnaire (BAMC Form 76) indicates that individual:
 - a. "Is presently being treated or under the care of a physician for any medical condition," or
 - b. "Is taking any prescribed medication (pills, shots, etc.)."
2. All completed Laboratory Study slips are forwarded to (or placed in) the individual's Outpatient Records. 100%

Table 1

Possible Clinical Privileges for Psychologists

General Type	Sample Language
Evaluation Privileges	<ol style="list-style-type: none"> 1. Order, direct, provide psychological consultations. 2. Perform special evaluative procedures: <ol style="list-style-type: none"> a. Clinical interviewing b. Behavioral assessment c. Psychodiagnostic assessment d. Biobehavioral & psychophysiological assessment e. Neuropsychological screening & examination f. Mental status examination g. Forensic assessment h. Vocational/educational assessment i. Psychosocial assessment 3. Perform other psychological assessment toward diagnosing nature and causes, and predicting the effects of subjective distress; of personal, social and work dysfunction; and of the psychological and emotional factors involved in, and consequent to, physical disease and disability. 4. Perform psychological assessment for formulating diagnoses of mental conditions; specifically limited to DSM III.
Treatment Privileges	<ol style="list-style-type: none"> 1. Independently select and provide psychological treatment interventions: <ol style="list-style-type: none"> a. Individual psychotherapy b. Group psychotherapy c. Behavior therapy d. Marital therapy e. Family therapy f. Hypnotherapy g. Biofeedback h. Crisis intervention

- i. Pain management
- j. Rehabilitation services
- k. Environmental management & design

2. Write and sign orders for psychological treatment and behavioral management plans.
3. Effect hospital admission; specifically limited to Psychiatry (or other) Service, and only with concurrent review and approval (or collaboration) of staff physician.
4. Direct provisions of preventive mental health services.
5. Other, as appropriate.

Consultation
Privileges

1. Request consultations from other medical Services.
2. Provide psychological (mental health) consultation service to:
 - a. Individual beneficiaries
 - b. Other local MEDCEN (MEDDAC) Services and Clinics
 - c. Command and command units
 - d. Military and civilian agencies
 - e. Other MTFs within health care Area or Region
 - f. Staff Judge Advocate, military courts/boards and to medical boards when mental health testimony, evaluation, or commentary are requested regarding issues of competency, and/or sanity and of other behavioral, emotional and mental conditions
3. Enter "Psychology Notes" on Doctors Progress Notes (SF Form 509)
4. Other, as appropriate.

Referral
Privileges

1. Refer patients to Services and Clinics of MTF.
 2. Refer patients to civilian practitioners or agencies for psychological care and related services (i.e., thru CHAMPUS Advisor, etc.).
-

Training/Teaching
Privileges

1. Teach and/or train and/or supervise Interns, Residents, Fellows, and Physician Assistants in training at MTF.
 2. Train and supervise psychology personnel and Behavioral Science Specialists.
 3. Train and supervise USAR personnel on active duty for training attached to Service.
 4. Other, as appropriate, to include professional community education and staff development.
-

Additional supervisory
Privileges

1. Direct/supervise the use & control of psychological evaluation test materials (IAW HSC Reg 40-3).
 2. Direct (or contribute to) the technical supervision of DA Civilian psychological personnel.
 3. Supervise PR & QA assessment of psychological services.
-

Clinical investigation
Privileges

1. Design scientific & clinical research, including individual case and control group studies and program evaluations.
 2. Plan, conduct, and supervise studies in clinical psychology related areas.
-

An Analysis of Community Mental Health Services
Within Health Services Command

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Abstract

There have been numerous research studies conducted to examine the epidemiological and demographic variables of patients who have presented themselves or been referred for mental health services in the Army. However, to date no systematic study has been conducted of a specific mental health agency, such as the CMHS. The chiefs of 30 of the 32 CMHSS within HSC were telephonically surveyed utilizing a structured interview. The purpose of the present study was to establish a data base about CMHSS within HSC with regard to organizational positioning, staffing levels, services provided, workload and support climate. The implications of this data are discussed for policy and guidance concerning CMHS organization, staffing and workload reporting.

Introduction

There have been numerous research studies conducted by mental health personnel within the Department of Defense which have examined the epidemiological and demographic variables of patients who have presented themselves or been referred for mental health services (Hulsebus et al, 1980; Zych, 1980, 1980; Quirk et al, 1977). Many of these studies have been performed by Community Mental Health Service (CMHS) personnel at installations within Health Services Command (HSC). In addition, various conceptual and descriptive articles have been published outlining innovative programs implemented in different military environments, targeting a number of at-risk patient populations (Blaustein et al, 1978; Conner and Thoresen, 1977; Lubetsky et al, 1963).

However, to date little has been done to systematically study a specific mental health agency, such as the CMHS, on an HSC-wide basis. Allerton and Peterson (1957) in an article on preventive psychiatry do at least review the development and the then current status of the forerunner to the CMHS, the Mental Hygiene Consultation Service (MHCS). They report that in 1955 there were 19 active MHCSs and that by 1956 there were 22. They further indicate that by this point MHCS coverage had expanded from the World War II focus on basic training posts to include coverage for the majority of all active duty personnel. Of most importance to the present discussion is that they saw the MHCS as being primarily a preventive program which included as a major function the provision of advisory services to command regarding mental health trends and issues.

In a more recent article, Bevilacqua, Morgan and Hedlund (1971) reported on a survey of 10 of the 37 MHCSs in existence at that time. While their purpose was to determine methods for computer research support to clinical operations, they did collect data regarding the staffing of post mental health resources, population served and functions performed. The authors indicate that the "successfulness" of an MHCS was judged by such things as the variety of services available, the number and proportion of community consultation activities, individual treatment sessions and the extent of use of interdisciplinary, functional teams versus individual-discipline structured activities.

The objective of the present study was to survey all the CMHSs within HSC and to attempt to systematically delineate their similarities and differences. More specifically, the purpose was to establish a data base about CMHSs within HSC with regard to organizational positioning, staffing levels, services provided, workload and support climate. Such data has implications for policy and guidance concerning CMHS organization (HSC Regulation 10-1), staffing (DA Pamphlet 570-557) and workload reporting (User's Manual, MED 302 report).

Data Collection

To insure a high response rate, it was decided to survey all CMHSs within HSC telephonically rather than by constructing a questionnaire to be mailed. A standardized telephonic interview was constructed which examined the following areas: organizational positioning, staffing, services provided, workload and support climate.

Only those MEDCEN/MEDDACs within HSC with recognized CMHSs on their Table of Distribution Allowances (TDAs) were included in the study. Thirty-two (32) CMHSs were identified utilizing this criterion. The TDAs of these CMHSs, as well as the appropriate organizational diagrams, were obtained from HSC and utilized during the telephonic interview. Of the 32 identified/recognized CMHSs, data was collected on 30. In each case, either the chief of the CMHS was interviewed or a representative designated by the chief. With regard to the two CMHSs from which data was not collected, the first CMHS, while having recognized requirements, had no authorizations and consequently no functional CMHS. The second CMHS had only two requirements with one position authorized and only one individual assigned who was departing within the month. Data collection occurred in June 1984.

CMHS workload data and population served data was obtained from the HHS Patient Administration Systems and Biostatistics Activity. Specifically, data was obtained from the following lines of the Med 302 Report (Medical Summary Report) for Fiscal Year 1983: Line 133 - Mental Health Clinic Visits; Line 183 - Population Served; and Line 184 - Strength Provided Primary Care.

Results

The results of the CMHS survey are presented below and are organized into the five major content areas mentioned previously.

Categorization of CMHSs

The 30 CMHSs were grouped into four types utilizing two criteria as shown in Table 1. First, CMHSs were sorted into three categories based on

Insert Table 1

their organizational position within the MEDCEN/MEDDAC (Rule #1). CMHSs were categorized as either separate, combined or subordinate. A separate CMHS (Type 1) was defined as a CMHS which was organizationally separate from the Department of Psychiatry. A combined CMHS (Type 2) was defined as a CMHS which functioned in lieu of the Department of Psychiatry, that is, it functioned as a combined service, providing the services of both a separate CMHS and a Department of Psychiatry. A subordinate CMHS was defined as a CMHS which was a service within the Department of Psychiatry. This organizational position could have been determined by the TDA or by the order of the MEDCEN/MEDDAC commander, that is, by OER rating scheme. The second criterion utilized dealt with the nature of the CMHS patient population, that is, was the patient population primarily active duty personnel, or was it a mixed population made up mostly of family members and retired personnel (Rule #2). Separate CMHSs (Type 1) saw predominantly active duty personnel while combined CMHSs (Type 2) saw a mixed population. Based on Rule #2, subordinate CMHSs were further subdivided into subordinate-Active Duty (AD) CMHSs (Type 3), those which saw primarily active duty personnel, and subordinate-mixed CMHSs (Type 4), which saw a mixed population. These four types of CMHSs will be utilized throughout the remainder of the report.

What is significant about this categorization process is the fact that there is no break at all. The organizational concept of a CMHS has been operationalized in four different ways: separate CMHSs (8 out of 30 or 27%); combined CMHSs (16 out of 30 or 53%); subordinate-AD CMHSs (3 out of 30 or 10%); and subordinate-mixed CMHSs (3 out of 30 or 10%). The establishment of separate and combined CMHSs is authorized under the provisions of Chapter 7, Article 10-1, while subordinate-AD and subordinate-mixed CMHSs require an exception to policy.

Installation active duty population data obtained from line 183 of the 302 Report (Medical Summary Report) reinforces the organizational guidance cited in Chapter 7, HSC Regulation 10-1. Paragraph 7-1b states that "CMHS will be established in those MEDCEN/MEDDACs which support large active duty Army military populations. In addition, at smaller MEDDACs where there is but one or no psychiatrist assigned, the CMHS will be established in function in lieu of the hospital Department of Psychiatry and Neurology Social Work Service." As can be seen in Table 2, separate CMHSs tend

Insert Table 2

be found at larger installations, that is, installations with an active duty population of 15,000 or greater. Combined CMHSs tend to be found at smaller installations, that is, posts with an active duty population of less than 15,000.

(Continued)

As was mentioned previously, the TDAs of all CMHSs surveyed were obtained from HSC prior to telephonically contacting each CMHS chief. During the structured telephonic interview, the requirements and authorizations were verified for accuracy, and information obtained on each assigned individual, i.e., rank or civilian pay grade, and specialty skill indicator (I), military occupational specialty (MOS), or civilian specialty code, as appropriate. Table 3 summarizes the data and depicts the average number of requirements, authorizations and assigned personnel for each type of CMHS and for HSC overall. There appears to be little difference between the four types of CMHSs in terms of their average number of authorizations and assigned personnel. Subordinate-AD CMHSs do appear to have a larger average number of requirements (13.00 as opposed to either 10.88, 10.25, or 10.33), but this does not seem to have resulted in a proportionate increase in authorizations or assigned personnel. Overall within HSC, CMHSs have approximately 11 requirements, 8 authorizations, and 8 assigned personnel.

Insert Table 3

Table 3 also lists the percent of requirements which are authorized as well as the percent of authorizations which are filled with assigned personnel. Results show that the percent of authorized requirements (77% on average HSC-wide) is equivalent to or slightly below the HSC average for services (80%). In fact, 53% of all CMHSs (the combined CMHSs) on the entire list 80% of their requirements authorized. Additionally, CMHSs

The 1984 Active Duty Psychologists Survey:
Army Clinicians' Responses

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As part of the 1984 survey of active duty military psychologists conducted by Division 19 of the American Psychological Association, active duty Army clinical psychologists were questioned on their perceptions of the Army. Surveys were sent to 128 Army psychologists with the 68S specialty skill identifier. Responses were received from 98 of the Army clinical psychologists; of the non-responders, 11 left the service, and 5 moved during the survey. Comparisons with the 1976 survey (Mangelsdorff, 1984) were made.

What factors affect the decision to remain in the military or to leave? This problem has been addressed at varying times (Hedlund, 1968; Mangelsdorff, 1978, 1984; Murray, 1978). The recurrent issues identified as influencing military health care professionals to leave the service were: inadequate pay, possibility of nondirect patient care assignments, lack of participation in decisions affecting their careers, lack of sense of belonging to the military community, inadequate integration into military social life, poor equipment and support facilities. The current study was part of the 1984 survey of active duty military psychologists conducted by Division 19 of the American Psychological Association. The purpose was to document issues of concern to Army clinical psychologists.

METHOD

Subjects.

Surveys were sent to 128 active duty Army psychologists with the 68S special skill identifier.

Procedure.

The Division 19 survey instrument was mailed to all military psychologists on active duty in 1984. Respondents were asked for demographic data, attitudes toward a military career, and attitudes toward a variety of issues. The issues were assessed from two perspectives: long term motivator factors and from the degree of satisfaction felt. Attitude statements were assessed using 7-point Likert scales (1 = minimum to 7 = maximum).

Table 9
Support Climate Ratings
0 = low to 10 = high

Type of CMHS	MEDCEN/MEDDAC Support Rating	Installation Support Rating
1. Separate	5.63	7.63
2. Combined	7.50	7.18
3. Subordinate - AD	6.33	5.67
4. Subordinate - Mixed	7.67	5.67
HSC Average	6.90	7.00

Table 8
Reportable & Non-Reportable "Clinic Visits"
Percent of Acknowledgment as Reportable

<u>Reportable "Clinic Visits"</u> IAW User's Manual, Med 302 Report	<u>Non-Reportable "Clinic Visits"</u> IAW User's Manual, Med 302 Report
97% each time an individual is treated or evaluated	43% consultation with a third party such as a unit commander, first sergeant, teacher, or another health care provider, when the patient is not present
33% each member of a therapy group	
17% prescription renewals along with a clinical evaluation	40% every psychological test given
33% telephonic medical consultation with a patient, documented in the patient's record	20% Each administration of a psychological test
27% group activity counseling (educational classes) each group or class counts as one clinic visit	20% each scoring of a psychological test
33% each time a patient is referred to another section of CMHS for another type of service	20% each interpretation of a psychological test
0% each time an examination, evaluation or treatment is provided in the unit, school, community center, home, etc.	7% telephonic medical advice to a patient, <u>not</u> documented in the patient's record
	7% prescription renewals without clinical evaluation of the patient
	3% individual case staffing
	3% no-shows
	3% cancelled appointments

Table 6
Composition of CMHS Patient Population

Type of CMHS	Average Percent Active Duty	Average Percent All Others
1. Separate	95%	5%
2. Combined	53%	47%
3. Subordinate - AD	99%	1%
4. Subordinate - Mixed	47%	53%
HSC Average	69%	31%

Table 7
Average Monthly Clinic Visits for FY 83

Type of CMHS	For FY 83 Average Monthly Clinic Visits	Range
1. Separate	427	214 - 761
2. Combined	336	48 - 795
3. Subordinate - AD	333	189 - 510
4. Subordinate - Mixed	791	224 - 1811
HSC Average	416	48 - 1811

Table 4
SSI & Rank of CMHS Chief

Specialty Skill Indicator (SSI)	CPT/03	MAJ/04	LTC/05	COL/06	Total
Psychiatrist W	3	3	11	*5	22
Psychologist S	1	1	2	0	4
Clinical Work Officer R	3	1	0	0	4
Total	7	5	13	5	30

*includes one GS-14 civilian psychiatrist

Table 5
Services Provided

Type of CMHS	Percent Direct Patient Care Related	Percent Consultation/Prevention/Education
1. Separate	82%	18%
2. Combined	92%	8%
3. Subordinate - AD	77%	23%
4. Subordinate - Mixed	83%	17%
HSC Average	87%	13%

Table 2
Total Active Duty Population Served

Type of CMHS	Less Than 7,500	7,500 to 14,999	15,000 to 19,999	20,000 & Above	Total
1. Separate	1	0	2	5	8
2. Combined	5	6	4	1	16
3. Subordinate - AD	0	1	0	2	3
4. Subordinate - Mixed	0	1	0	2	3
Total	6	8	6	10	30

Table 3
Average CMHS
Requirements, Authorizations & Assigned Personnel

Type of CMHS	Average Required	Average Authorized	Average Assigned	Percent Auth/Req	Percent Asqd/Auth
1. Separate	10.88	8.25	8.13	76%	98%
2. Combined	10.25	8.25	8.63	80%	105%
3. Subordinate - AD	13.00	9.00	7.00	69%	78%
4. Subordinate - Mixed	10.33	7.00	7.67	68%	110%
HSC Total	321	246	247	---	----
HSC Average	10.70	8.20	8.23	77%	100%

Table 1
Categorization of CMHSS

Rules	Categories			
	1. <u>Separate</u> <u>CMHSS</u>	2. <u>Combined</u> <u>CMHSS</u>	<u>Subordinate</u> <u>CMHSS</u>	
<u>Rule #1:</u> Organiza- tional Position	CMHS is a sep- arate service from the Dept. of Psychiatry	CMHS functions in lieu of the Dept. of Psvchi- atry	CMHS is a service within the Dept. of Psychiatry (by TDA or by order of the MEDCEN/MEDDAC Cdr)	
			3. <u>Subordinate-</u> <u>Active Duty</u> <u>CMHSS</u>	4. <u>Subordinate-</u> <u>Mixed</u> <u>CMHSS</u>
<u>Rule #2:</u> Nature of Population Served	CMHS serves mostly active duty personnel	CMHS serves a mixed popula- tion	CMHS serves mostly active duty personnel	CMHS serves a mixed popula- tion
	N = 8	N = 16	N = 3	N = 3
	27%	53%	10%	10%

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Discussion

In comparing the findings of the present study with those of Allerton and Peterson (1957) and of Bevilacque, Morgan and Hedlund (1971), it becomes clear that the CMHS has gained a measure of permanence for its organizational existence. This is reflected by the stability in the number of CMHSs reported over time and by the finding that current CMHSs are authorized and staffed at levels equal to the HSC averages for all services. Unfortunately, differences in data collection and purpose between the studies does not allow for direct comparisons between past and present staffing patterns or workload levels. Bevilacque et al do comment that the total number of mental health personnel assigned to each post varied greatly and was not directly proportional to the size of the population supported. This was equally true in the present study for both the number of personnel supported and the workload produced by each CMHS. They also report that in all instances the senior Army psychiatrist was chief of both the hospital Psychiatry Service and the CMHS. This, of course, was by definition not the case for the 8 CMHSs which fell in the "separate" category of the present study nor for 5 other current CMHSs which had either a social work or psychology officer as chief.

Probably the most striking finding of the present study is the variability and confusion surrounding the reporting of workload. In part, this can be attributed to the inexperience of some leaders, to poor record keeping practices, to ignorance of what may be counted as valid workload or, as stated above, to a belief that valuable and worthwhile activities are not receiving proper credit. To a larger extent, though, this confusion in workload reporting seems to reflect a loss of clear purpose for the existence of the CMHS both by the larger system and by the personnel staffing the CMHSs. Is the CMHS primarily an outpatient clinic, as dictated by the workload reporting system and the need for MEDCEN/MEDDAC commanders to generate Medical Care Composite Units (MCCUs) to obtain funding and staffing, or is it, as implied by its historical development and the mission statement in HSC Regulation 10-1, primarily a consultative, preventive agency designed to be an alternative to the traditional hospital/clinic based method of mental health service delivery?

To answer the above question and many others generated by this study, it is recommended that an HSC-wide conference focused on issues relevant to CMHSs be conducted. It is further recommended that a proponent office or agency for CMHSs be designated at the HSC level. This office could then not only assist with clarification of the current issues but also insure that CMHSs are properly represented in future policy deliberations.

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or post, that is, all units other than the MEDCEN/MEDDAC. They were asked to rate this support climate on a scale from 0 to 10, 0 being no support for CMHS activities at all, and 10 being tremendous support. Table 9 is a summary of those ratings which indicate that overall, there

Insert Table 9

is little perceived difference between the support CMHSs receive from the MEDCEN/MEDDAC and from other installation units (6.90 and 7.00 respectively). The overall impression of support is notably positive. However, separate CMHSs and subordinate-AD CMHSs perceive less support from their MEDCEN/MEDDACs than do combined CMHSs or subordinate-mixed CMHSs.

Summary of Findings

1. The organizational concept of a CMHS is not unitary in nature.
2. The size of the installation has a significant bearing on the organization and functioning of the CMHS.
3. The percentage of CMHS authorized requirements is equivalent to or slightly below the HSC average for all services. CMHSs are staffed at full authorized levels.
4. Psychiatrists, psychologists and social work officers serve as chiefs of CMHSs.
5. Considering the mission of the CMHS as outlined in HSC Regulation 10-1, all types of CMHSs provide little in the way of consultative, preventive or educational services.
6. Separate and subordinate-AD CMHSs provide services to a more focused population while combined and subordinate-mixed CMHSs are more diffused in their target population.
7. CMHS workload, as reported on the Med 302 Report (Medical Summary Report), is tremendously variable from clinic to clinic. Much of the variability is related to the manner in which workload is reported across CMHSs.
8. There is little difference between the overall support CMHSs receive from the MEDCEN/MEDDAC and from other installation units. The overall impression of support is positive.

The results are presented below by type of CMHS. If more than one CMHS chief mentioned a particular activity/service, it is noted in parenthesis.

1. Separate CMHSs

- a. Command consultations: client-centered (5 CMHSs)
- b. Training and education time:
 - (1) post graduate fellows
 - (2) psychology interns
 - (3) education with units (2 CMHSs)
- c. Command consultations: organization-centered (4 CMHSs)
- d. Consultation time to hospital staff

2. Combined CMHSs

- a. CMHS case staffings
- b. Consultation with the stockade
- c. Quality assurance review and other administrative time
- d. Liaison time with units and organizations
- e. Consultation with the inpatient psychiatric ward (3 hours per case)
- f. Consultation with other physicians
- g. Prescriptions written
- h. Ward rounds
- i. Lengthy psychological evaluations (3-4 hours)
- j. Research in the area of psychological testing for flight training
- k. Psychological testing in general
- l. Administrative time (case recording, supervision, etc.)
- m. Family Advocacy Case Management Team (FACMT) case investigation (because of the large amount of time involved in each case)
- n. Equal Opportunity (EO) staff officer time
- o. Supervision of other programs (FACMT, ADAPCP)
- p. Travel time (as much as 4 days per month on consultations)

3. Subordinate-AD CMHSs

- a. Telephonic consultations
- b. Command consultations involving educational programs
- c. CMHS paraprofessional supervision
- d. CMHS case staffing

4. Subordinate-mixed CMHSs

- a. Educational groups
- b. Each CMHS staff member involved in a consultation

The results on CMHS workload indicate that if such data is to be useful and interpretable, the guidelines for its reporting must be clear and also understood by the generators of that work. More importantly, these guidelines must be able to capture all the various service activities in which CMHSs in any setting may be involved, whether they be direct patient care related or activities such as consultation/prevention/education.

Support Climate

CMHS chiefs were asked to rate the support CMHS receives for its activities from the MEDCEN/MEDDAC as a whole and also from the installation

and assigned personnel. Given approximately the same number of personnel, CMHSs should generate approximately the same amount of work, within limits. However, it does not appear reasonable to expect a range of from 48 clinic visits to 1811 clinic visits. Additionally, four CMHSs reported no workload at all on line 133. It can only be assumed that this workload is being reported on other lines of the Med 302 Report such as line 130 (psychiatry), line 131 (psychology), line 132 (child guidance) or line 153 (social work services).

Much of the variability in CMHS workload is related to the manner in which it is reported across clinics. CMHS chiefs were asked to specify all the activities/functions/services which were reported as CMHS "clinic visits" on their MEDCEN/MEDDAC Med 302 Report. Table 8 represents a summary

Insert Table 8

of the activities/functions/services which were acknowledged as reported workload by each CMHS. All the acknowledged activities were divided into two groups, reportable and non-reportable clinic visits, as defined in Chapter 3 of the User's Manual for the Med 302 Report. As can be seen from Table 8, not all CMHSs acknowledge counting as reportable workload all the functions/activities/services they are allowed to (first column of Table 8). One explanation for this may be that the CMHS does not provide that particular service, and therefore, the activity was not acknowledged as reportable, i.e., a CMHS with no therapy groups did not acknowledge this as reportable because there were no therapy groups to report.

What is most important to note is the percent of all CMHSs which acknowledged specific activities/functions/services as reportable, when in fact they are non-reportable by Med 302 Report User's Manual guidelines. 43% (13 out of 30) of all CMHSs report consultations with a third party when the patient is not present. 40% (12 out of 30) of all CMHSs report every psychological test given. Other activities which were inaccurately being counted as reportable included: each administration (20%), each scoring (20%), and each interpretation (20%) of a psychological test, non-documented telephonic medical advice (7%), prescription renewals without a clinical evaluation (7%), individual case staffings (3%), no-shows (3%) and cancelled appointments (3%).

What these results suggest is not simply ignorance about the criteria for accounting for CMHS workload. Rather it suggests that CMHSs are performing work, specific activities which CMHSs feel are valuable and worthwhile, for which the service receives little or no credit. Instead of losing this data, CMHSs report such activities as reportable clinic visits.

CMHS chiefs were also asked what activities/services should be reported as CMHS workload which are not now reportable under present guidelines.

present workload accounting system as outlined in the User's Manual for the Med 302 Report (Medical Summary Report) provides almost no credit for consultation/prevention/education services. As will be discussed later, guidelines for documenting CMHS workload are almost exclusively defined in terms of direct patient care type services, and even these guidelines are not clear. There appears to be a contradiction between the document which provides CMHSs with its mission and organizational guidance (HSC Regulation 10-1) and the document which defines what work CMHS gets credit for (User's Manual, Med 302 Report (Medical Summary Report)).

CMHS chiefs were also asked to define the nature of the clinic patient population, that is, what percentage of patients seen were active duty personnel, retired military, family members of active duty personnel and family members of retired military. Of primary interest was the relationship between the percent of active duty personnel seen and all others. Admittedly, in most cases the data reported represent only estimates by each chief rather than actual patient counts. The results shown in Table 6

Insert Table 6

indicate that separate CMHSs and subordinate-AD CMHSs provide services primarily to active duty personnel (95% and 99% respectively), while combined CMHSs and subordinate-mixed CMHSs see a mixed population (a 53%/47% and 47%/53% split respectively). Coupling these findings with the data on consultation/prevention/education, it would appear that as a CMHS becomes more diffuse in terms of their target population, needing to serve a larger spectrum of the population, consultation/prevention/education services decrease. More time is devoted to direct patient care simply because there are more patients to be seen.

Workload

The average number of monthly clinic visits for Fiscal Year 1983 for all CMHSs was obtained from HSC from line 133 of the Med 302 Report (Medical Summary Report), the official reporting line for a CMHS within a MEDCEN/MEDDAC. This data is summarized in Table 7. What becomes most

Insert Table 7

apparent upon examination of Table 7 is that there is tremendous variability among CMHSs with regard to average monthly workload reported (48 - 1811 clinic visits with an average of 416). This is not at all consistent with the data reported on the average number of CMHS requirements, authorizations

are staffed at full authorized levels (100% on the average HSC-wide). However, officer/enlisted/civilian and rank/grade imbalances were not examined here and their analysis may yield some interesting results which can have implications for service provision.

One specific position within the CMHS was examined, that of the chief. Paragraph 7-1d of HSC Regulation 10-1 states that "any qualified behavioral science officer may serve in the capacity of Chief, CMHS, as designated by the commander." In fact, the study found this to be the case. Table 4

Insert Table 4

lists the number of CMHS chiefs by specialty skill indicators (SSIs) and rank/grade. 73% (22 of 30) were psychiatrists, 13.5% (4 of 30) were psychologists and 13.5% (4 of 30) were social work officers. 60% (18 of 30) of all CMHS chiefs were lieutenant colonels or colonels with lieutenant colonel being the modal rank (43%). In only one case was the chief of CMHS a civilian, and that individual was a psychiatrist.

Services Provided

Each chief was asked to specify all the various services provided by the CMHS, and then to assign a percentage to each service area mentioned. Of interest to the investigators was not the identification of all the specific services provided by CMHSs, but rather the examination of the extent of the emphasis placed on consultation/prevention/education as contrasted with direct patient care related services. Consequently, the services specified were then divided into these two categories.

The organizational forerunner to the CMHS is, of course, the Mental Hygiene Consultation Service (MHCS). The MHCS's primary focus was consultation to commanders, consultation which was not necessarily patient related but more to do with the morale and effectiveness of soldiers. In point of fact, HSC Regulation 10-1 still lists the "provision for mental health consultation services to command. . ." (paragraph 7-2a(1)) as the first function under CMHS organization. However, as Table 5 points out, only

Insert Table 5

13% of CMHS service delivery time is devoted to consultation/prevention/education services. Even more striking is the fact that the combined CMHSs, 53% of all CMHSs, spend on the average only 8% of service delivery time in this important area. An important fact to consider here is that the

RESULTS

Sample Characteristics

The 98 respondents were characterized as follows. Gender: 12 women and 86 men. Rank: 60 captains, 26 majors, 10 LTCs, and 2 colonels. Doctorate conferred: 88 Ph.Ds, 8 Psy Ds, 1 Sc. D, and 3 without doctorates completed. Licensed/certified as psychologists: 50 were licensed, 48 were not. National Health Register: 36 were listed, 62 were not. Diplomates: 8 were diplomates, 90 were not. Military education completed (highest level): senior service school (2), command and staff (21), advance course (28), basic officer course (38). The average age of the sample was 36.0 years. The average number of months in present assignment was 18.7 months. The average number of years of active military service completed was 8.7 years.

Issues of Concern in 1984

The issues reported as being of concern (as defined by having high values on the attitude scales) were: "Extent willing to become licensed to advance in rank" (6.6), "Commitment to profession" (6.3), "Commitment to work" (6.4), "Extent responsible for own career development" (6.0). The long term motivators of most concern were: "Having rank commensurate with professional experience" (6.3), "Having retirement benefits available" (6.2), "Personal control over how own career develops" (6.2), "Career progression" (6.1), "Having opportunity for independent thought and action" (6.1), "The amount of responsibility given to me" (6.1). Issues where there were significant differences between the Satisfaction and the Long Term Motivators were regarding: "The promotion criteria", "The availability of incentive pay," and "Desirability of an equivalent amount of time for advanced professional training as a substitute for suggested/required military training."

Regression Equation Development

A regression equation was developed to predict the response to the 7-point criterion item "Likelihood remain until eligible for retirement" (scale endpoints were 1 = low probability and 7 = high probability). From the pool of demographic section responses and Long Term Motivators, items having content specifically dealing with military career, psychology, and/or military identity were identified. The items selected in the regression analyses best reflect issues affecting the decision to remain in the service. The equation developed was significant ($F = 3.27$, $df = 10/80$, $p = .0014$; multiple $R^2 = .539$). The most salient issues (with betas) were: "Rank ordering of self as military officer" (-.35), "My liking my present position" (.19), "Extent responsible for own career development" (.17), and "Extent current position allows you to keep up with psychological literature" (.13).

DISCUSSION

Overview.

The discussion will reiterate the findings from the 1976 survey of active duty Army psychologists (Mangelsdorff, 1978), the 1976 issues as they related to retention factors (Mangelsdorff, 1984), and how the 1984 issues compare to those of 1976. An overall discussion of salient points will follow.

The 1976 Survey.

The 1976 issues reported as being of greatest concern for active duty Army clinicians (as defined by having high values on the attitude scales) were: "Having rank commensurate with professional experience and qualifications" (6.15), "My personal control over how my own career develops 5.96), "Having the opportunity for independent thought and action" (5.93), "My personal accomplishments as a psychologist" (5.80), "My professional identity as a psychologist" (5.69), "Having the opportunity to remain current in my field in psychology" (5.69), "The amount of responsibility given to me" (5.69). The issues of concern for predicting likelihood to remain until eligible to retire centered around the development of a professional identity as a military officer. These included "Sense of membership in Army", "Having retirement benefits available", "Total number of years of active military service completed."

The 1984 Survey.

The issues of most concern to the active duty Army clinical psychologists dealt with the establishment of a professional career. These items included: career development and progression, professional experience, responsibility, opportunities for independent thought and action, and availability of retirement benefits. The development of an identity as a military officer was significant in determining whether the clinician would likely remain in the service until eligible to retire.

Salient Issues.

The 1984 respondents were older, with more years of active military service completed, and with more military education than the respondents in 1976. Since the mid 1970s, more Army psychologists have elected to remain on active duty to make the military their career. Army clinical psychologists have sharpened their own psychological skills. Professional psychology credentials have been added: taking post-doctoral fellowships on active duty, becoming licensed/certified as psychologists, listing on the National Register of Health Service Providers in Psychology, and sitting the Diplomate examinations. In addition, Army psychologists have completed more advanced military education programs. In the 1984 Army, to be competitive for promotions requires being accomplished as a

psychologist and as a military officer. The issues with significant differences between satisfaction and long term motivators affected career options: availability of incentive pay, promotion criteria, and equivalency of professional experience for required military training. These elements, in part, affect the status of the psychologist competing with other MSC officers for promotions and recognition. The themes tapped in the 1976 survey of: career development and progression, professional identity, and enhancement of professional skills are again reflected in the responses to the 1984 survey.

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A COLLECTION OF REFERENCES PERTAINING TO CONFIDENTIALITY
ISSUES IN PROFESSIONAL PRACTICE OF ARMY
MEDICAL DEPARTMENT PSYCHOLOGISTS*

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Abstract

Questions have been raised about the established provisions for confidential information handling by Army Medical Department psychologists. Civilian professional standards and service guidelines regarding confidentiality are abridged. Specific U.S. Army regulation references are listed to illustrate the manner and means for protecting the confidentiality of medical information obtained by psychologists, who have official duties to observe, evaluate, treat, and provide psychological consultation and services to members and units of the armed forces. These regulations implement statutory law as set by U.S. Code. The references regarding the compilation, maintenance, ownership, transmittal, and disposition of psychology records and reports are also noted.

References for civilian professional Ethical Standards and Specialty Guidelines

1. American Psychological Association. (1983). Ethical Principles of Psychologists. American Psychologist, 36, 633-638. Principle 5, Confidentiality, states:

"Psychologists have a primary obligation to respect the confidentiality of information obtained from persons in the course of their work as psychologists. They reveal such information to others only with the consent of the person or the person's legal representative, except in those unusual circumstances in which not to do so would result in clear danger to the person or to others. Where appropriate, psychologists inform their clients of the legal limits of confidentiality.

a. Information obtained in clinical or consulting relationships, or evaluative data concerning children, students, employees, and others, is discussed only for professional purposes and only with persons clearly concerned with the case. Written and oral reports present only data germane to the purposes of the evaluation, and every effort is made to avoid undue invasion of privacy.

b. (Deleted)

c. Psychologists make provisions for maintaining confidentiality in the storage and disposal of records.

d. When working with minors or other persons who are unable to give voluntary, informed consent, psychologists take special care to protect these persons' best interests."

2. American Psychological Association. (1983). Specialty Guidelines for Delivery of Services. American Psychologist, 36, 639-669. Services by Clinical Psychologists, Guideline 2, Programs, states:

a. In Section 2.3.4 (p 646) that "Each clinical psychological service unit follows an established record retention and disposition policy.

"INTERPRETATION: The policy on record retention and disposition conforms to federal or state statutes or administrative regulations where such are applicable... These temporal guides are consistent with procedures currently in use by federal record centers."

b. In section 2.3.5. (pp. 646-647) that "Providers of clinical psychological services maintain a system to protect confidentiality of their records (italics added)." (For actual language and specifics see Guideline document.)

Military references

1. Armed Forces regulations implement statutory law as set by U.S. Code. They are in accordance with the U.S. Code.

2. Individuals in positions of command authority are responsible for the care of subordinates (Para 2-2, AR 600-20).

3. Commanders have authority to direct health care and evaluation of subordinates.

a. Re: Disability evaluation (Para 4-7, AR 635-40).

b. Re: General health (Para 5-29 thru 5-31, AR 600-20). Health care is defined in footnote as prevention, diagnosis, therapy, rehabilitation medicine, surgery, psychiatric and dental.

c. Re: Personnel Reliability Programs, Nuclear/Chemical Surety (AR 50-5).

d. Re: Security Control (Para 3-1a, AR 604-5).

4. Soldiers are informed of the routine uses of information gained through provisions of health care (AR 340-21). Privacy Act Statement - Health Care Records (DD Form 2005) is used.

This document is maintained in all health care records. While soldiers affix their signature to this document, acknowledging that they have been advised of the principal purposes for which information is used, such signature does not constitute authority to release obtained information. This document does cite suitability determinations and the providing of physical qualifications within U.S. Army includes "mental stability." (Chapter 9, AR 40-501).)

5. Information gained through psychological services provisions are "Private" and "Confidential" and no privilege attaches to this information or to statements made to psychologists by patients or clients (Para 2-2, AR 40-66; Para 151c(2) and Rule 502(d) of Manual for Courts-Martial).

6. Persons and agencies within DA that use medical information for official purposes must protect the privacy and confidentiality of that information (Para 2-3, AR 40-06).

7. DA policy states that medical confidentiality for all patients will be protected as fully as possible (Para 2-4, AR 40-66). Medical information will be used.....in connection with the health of command.....and other official purposes (Para 2-4a, AR 40-66). Paragraphs 2-4b of same AR define authorized access and actions resulting from unauthorized disclosure.

8. Psychologists, as members of the AMEDD team, have the official duty to evaluate, treat, provide psychological consultation and effect preventive mental health measures, to otherwise supply psychological services to members of armed forces, and to make periodic evaluations as required by regulations. They are directed to professionally observe, evaluate and attend to members and units of armed forces. This observation, evaluation and attendance is official and information thereby acquired is official (AR 40-216; AR 611-101; Para 151C(2), Manual for Courts-Martial).

9. Psychologists, as mental health officials, are required to accomplish psychological and mental status evaluations:

a. Pursuant to determining medical fitness, suitability, qualification and clearance of persons for service and duty assignments (AR 40-216; AR 635-100; AR 635-200; Para 4-23 and 4-30, AR 40-501; and references at para 2c above).

b. Pursuant to determining mental responsibility and capacity under military law (Manual for Courts-Martial).

10. Within the AMEDD, psychologists have the responsibility to direct (which includes control of) psychodiagnostic evaluations procedures (Para 4-6b(3)(b), HSC Reg 10-1).

11. Records of health care, that are initiated, compiled and maintained as a result of AMEDD psychological services, are considered a part of Army Medical Records File system (AR 340-18-9; referencing: Clinical Psychology Individual Case Files (No 917-07), Military Consultation Service Case Files (No 920-01), and Civilian Consultation Service Case Files (No 920-02). Each type of record has general content description and specified maintenance, retention and disposition policy.

12. The ownership of military psychologists' records is distinctly different from those of civilian psychologists in private practice. "Army psychologists' records" are the property of the government (Para 1-5, AR 40-66) and the laws and regulation on the control of government documents are specified in AR 340-17.

13. The commander of the Medical Treatment Facility (MTF) is the official custodian of the medical records at the facility. The Chief, Patient Administration Division of an MTF acts for the commander in matters of handling medical records (Para 1-4, AR 40-66).

14. Medical information disclosure procedures are elaborated in Para 2-5, AR 40-66.

15. Information acquired by psychologists is routinely released to commanders without servicemembers' written consent, in accordance with regulation, in at least the following instances:

- a. Use of Sick Slip (DD Form 689), AR 600-6.
- b. Use of Report of Mental Status Evaluation (DA Form 3822-R) or letters, AR 635-100, AR 635-200.
- c. Use of Sworn Statements (DA Form 2823) or letters in Line of Duty Determinations, AR 600-23.
- d. Use of Medical Condition - Physical Profile Record (DA Form 3349), AR 40-501.
- e. Use of letters, AR 40-216, AR 50-5, AR 600-20, AR 604-5, AR 635-40.
- f. Use of Sworn Statements or letters in legal/disciplinary proceedings, Manual for Courts-Martial.

*The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as necessarily reflecting the views of the Department of the Army or the Department of Defense.

CONSULTATION

AND

PREVENTION

Stress Management from an Organizational Perspective

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Abstract

Considerable documentation exists in the scientific literature linking psychosocial stress to the etiology and development of physical and psychological disorders. The far-reaching implications of this literature have stimulated strong interest among psychologists to develop behavioral approaches for the effective management and control of psychological and physiological responses to stress. As a result, numerous behavioral approaches have been identified as providing effective techniques for stress management. These approaches typically are designed for use in a controlled therapeutic setting, with the treatment focus on the individual or small group. Little attention has been given to stress management in an organizational setting, using a model that considers the interaction of environmental and individual factors. Such a model conceptualizes a broader approach to stress management, one which may more accurately depict psychosocial stress within an organization, and which provides the psychologist working within this setting with a more effective approach to resolving stress management issues. One organizational model of stress management, used at the Uniformed Services University of the Health Sciences, is discussed here.

Introduction

Over the past two decades the scientific literature has demonstrated a steadily increasing interest in the concept of stress, and research on stress is currently at a peak in popularity. Concomitant with this interest in the concept of stress is an interest in the development and use of stress management techniques, and in fact such techniques form a portion of the basis for the conceptualization of the new field of behavioral medicine.

Undoubtedly this interest in the development and use of stress management techniques has been fueled by research within the past decade which ties stress to the etiology and development of physical and psychological disorders. Research indicates that stress serves as a significant influence on the functioning of the individual's cognitive processes, decision-making abilities, and interpersonal skills. It has been well documented that stress is a significant influence in classic psychogenic diseases such as hypertension and ulcers, and there is some evidence suggesting that stress may be a factor in individual susceptibility and recovery from disorders ranging from the common cold to some forms of cancer.

Considerable progress has also been made within the past ten years in documenting the effectiveness of behavioral approaches in stress management. Techniques such as biofeedback, relaxation, and stress inoculation have been

proven to be effective in treating individuals with various emotional and physical disorders. Such techniques have also been demonstrated to be useful in enhancing the effectiveness of drug treatments and reducing the susceptibility to future disease when used in conjunction with medical treatments (Centry, 1984). Thus, stress management techniques are useful tools in both the treatment and prevention of illness.

It is interesting to note that little of the extensive research conducted in the area of stress management involves work conducted in an occupational setting, despite the increasing volume of literature documenting the role of occupational stress in the etiology and development of physical and psychological disorders (McLean, 1974). This relative absence of literature involving stress management in occupational settings is no doubt a result of a combination of factors: (1) difficulties in the logistics of such work; (2) difficulties in making organizations aware of the cost-effectiveness of approaching stress management from an organizational level; and (3) lack of awareness on the part of psychologists in general as to how to pursue this issue with any given hierarchy within an organization.

The challenge to the psychologist lies in his/her ability to design and utilize organizational stress management interventions that can be demonstrated to be both clinically effective and cost-effective. To meet such a challenge requires the psychologist to be a combination of clinician, administrator, researcher, and public relations person, for in an occupational setting the psychologist must be prepared not only to offer treatment, but to identify logistical/financial needs for implementing stress management interventions, to empirically evaluate the effectiveness of the interventions, and to involve individuals whose participation and/or support is essential to the success of these interventions.

Occupational Stress Management

As mentioned above, there is a growing body of literature which documents the role of occupational stress (OS) in the etiology and development of physical and psychological disorders. Examples of the psychological impact of occupational stress on the individual include anxiety, depression, and irritation (Althouse & Hurrell, 1977), tension and job dissatisfaction (Argyris, 1964), escapist drinking (Quinn & Shepard, 1974), deterioration of family relationships (Jahoda, 1979) and a drop in job productivity (Mangione & Quinn, 1975). Among the physical disorders linked to occupational stress are coronary heart disease (Cooper & Marshall, 1976), cancer (Sklar & Anisman, 1981), mononucleosis (Greenfield, Roessler, & Rosley, 1959), generally poor physical health (Quinn & Shepard, 1974), headaches (Tasto & Hinkle, 1973) and ulcers (Cobb & Rose, 1973).

Despite the considerable amount of literature underscoring the impact of occupational stress on the individual's health, little research or commentary exists on the topic of stress management within an organizational setting. Alt (1982) explains this state of affairs as a result of a tendency on the part of the field of occupational stress to become enmeshed in social controversy, disputes between labor and management, and political issues. Indeed, from a broad perspective, occupational stress cannot be considered as a phenomenon studied by psychologists in a vacuum; rather it becomes a

controversial issue involving concerns of the individual worker, management, the psychologist, and society in general. To Holt's (1982) list of factors impinging on work involving organizational stress, then, this author would add the psychologist's uncertainty as to how to effectively approach this complex issue.

Aside from controversy surrounding the field of occupational stress, problems in defining the concept of stress have caused confusion within the field. Historically, disagreement existed over considering stress as a situational factor (originating within the work environment) versus a reaction (the physical or psychological disruption of the individual's normal state). More recently an interactional definition of occupational stress has been proposed, suggesting an association between environmental characteristics and the individual's personality, cognitive, and behavioral characteristics in the individual's experience of physical and psychological stress. Endler and Magnusson (1976) have identified four basic tenets of this interactional approach:

1. Behavior is a function of a continuous interaction between the individual and the environment.
2. The individual has an intentional, active role in this interaction.
3. The individual's motivations, cognitions, and affect are important factors in determining how stress is experienced.
4. The psychological meaning the individual attaches to the situation is a determining factor in how the individual experiences stress.

Research linking specific motivations, cognitions and emotions to specific stress reactions has not been extremely conclusive. However, recent research strongly indicates that the Type A personality pattern (characterized by an excessive competitive drive, impatience, hostility, and accelerated speech and motor movements) combined with occupational stress may predispose individuals with this personality pattern to coronary heart disease (Krantz & Glass, 1984). Holt (1982) suggests that the difficulty in identifying specific personality characteristics that predispose the individual to occupational stress and occupational stress-related problems lies in the complexity of factors involved, and thus the complexity necessary in the research paradigms designed to study the phenomenon.

Manuso (1981) identified nine environmental characteristics that contribute to occupational stress experienced by the individual. Of course, from an interactional perspective, the extent to which any of these factors impacts on the individual is in part determined by characteristics of the individual. These environmental characteristics are:

1. Work load (too much or too little).
2. Job complexity (too ambiguous or too rigid).
3. Job role (too much or too little conflict).
4. Job responsibility (too much or too little responsibility).
5. Competition (extreme levels of competition or absence of competition).
6. Constant change or extreme monotony.
7. Over-involvement with stress carriers or isolation from others.
8. Overcontrol of the individual's functioning and self-concept by the

organization.

9. Conflict in the interactions between one's stage of career development, career opportunity, and management style.

may be interesting for the reader to pause and consider whether some or of the above characteristics are descriptive of his/her organizational environment.

In summary, it is generally recognized that combinations of variables within and outside the work environment interact and contribute to an individual's physical and psychological problems. It is also generally recognized that specific combinations of stress management techniques can be successful in assisting some individuals in coping adaptively with stress. The field of occupational stress has not advanced, however, to the extent that psychologists can predict with great assurance what combinations of stress management techniques are most beneficial to different individuals in different situations. In addition, little ground has been broken in assessing techniques of stress management combining methods that attempt to address needs of both the individual and the environment.

Psychological intervention into the relationship between occupational stress and individual health problems is admittedly a complex task because of potentially unlimited number of factors to consider. Nonetheless, the psychologist who is amenable to approaching stress management from an organizational perspective is afforded a tremendous opportunity to effect positive changes for both the individual and the organization.

From an interactional perspective, the psychologist must consider how the work environment impacts on the life of the individual, and thus he/she addresses the question of how to change the environment to make it more healthful for the individual, in addition to assisting individuals with learning coping strategies. Given that the work environment often exerts a great influence over the well-being of the individual worker, the interactional approach provides the psychologist with a perspective with the potential to create changes in a broader sphere than if individual coping skills alone are addressed.

From the standpoint of the organization, too, the interactional perspective is an ally in that it provides the organization with the insight and opportunity to effect changes that in the long run are cost-effective because a reduction in occupational stress can reduce absenteeism, increase worker productivity, and reduce insurance and medical costs. In addition, benefits to the individual psychologist may include the satisfaction of being able to effect positive changes on a very broad and long term basis for the health of the individual, rather than simply teaching people to cope with situations that remain unpleasant.

Uniformed Services University of the Health Sciences

The interactional approach to occupational stress, as described above, states in general terms the concept of addressing characteristics of both the work environment and the individual worker. It is necessary for the psychologist working within the organizational setting to take this approach

and apply it to the specific organizational setting of which he/she is a part. Each organization, depending on its basic structure, may have a different set of factors for the psychologist to keep in mind in order to use an interactional approach in a workable fashion. In order for the reader to understand how the interactional approach to occupational stress is used at the Uniformed Services University of the Health Sciences (USUHS) it may be helpful to first understand the basic structure and purpose of the university.

The purpose of USUHS is to educate and train officer-physicians for the United States Army, Navy, Air Force, and Public Health Service. All students are commissioned officers in the grade of O1; upon graduation they are promoted to O3 and owe seven years of active duty to their respective service.

The charter USUHS class entered the university in 1976, graduating in 1980. This first class was comprised of only 29 students. Today, each class contains approximately 155 students, making total enrollment approximately 200.

The university, which is fully accredited by the Liaison Committee on Medical Education, provides a fairly standard four year medical education for its students. Specifically, this means it provides the necessary number of hours in basic science and clinical areas to meet accreditation standards. The first two years of the program focus on the basic sciences in the classroom and laboratory settings, and the last two years require the students to work in a hospital setting in various medical specialties.

A wire diagram of the basic organizational structure of USUHS is depicted in Figure 1. The positions of President of the University and Dean of the School of Medicine are held by the same person. There are seven major sections which report directly to the President/Dean, one of which is the Office of Student Affairs.

The Office of Student Affairs is headed by an Assistant Dean (a physician) and includes a Deputy Assistant Dean (a psychologist). Currently both positions are filled by Army officers, but vacancies can be filled by Navy or Air Force officers. The function of this office is essentially to provide a source of support and formal advocacy for the welfare of the students by constantly monitoring and interacting across the multiple boundaries between students and all university elements. The manner in which this function is accomplished is not strictly dictated by the university, and is largely open to interpretation by Student Affairs. This obviously allows for a great deal of flexibility for Student Affairs in planning the types of services it will provide.

Admittedly, the direct accessibility to the President/Dean and the program flexibility afforded Student Affairs are tremendous advantages in approaching occupational stress from an organizational perspective. These factors allow Student Affairs to perhaps gain a better overall view of the functioning of the system while at the same time enabling direct access to individuals in positions which are key to effecting broad environmental changes. The location of the reader's current position within his/her

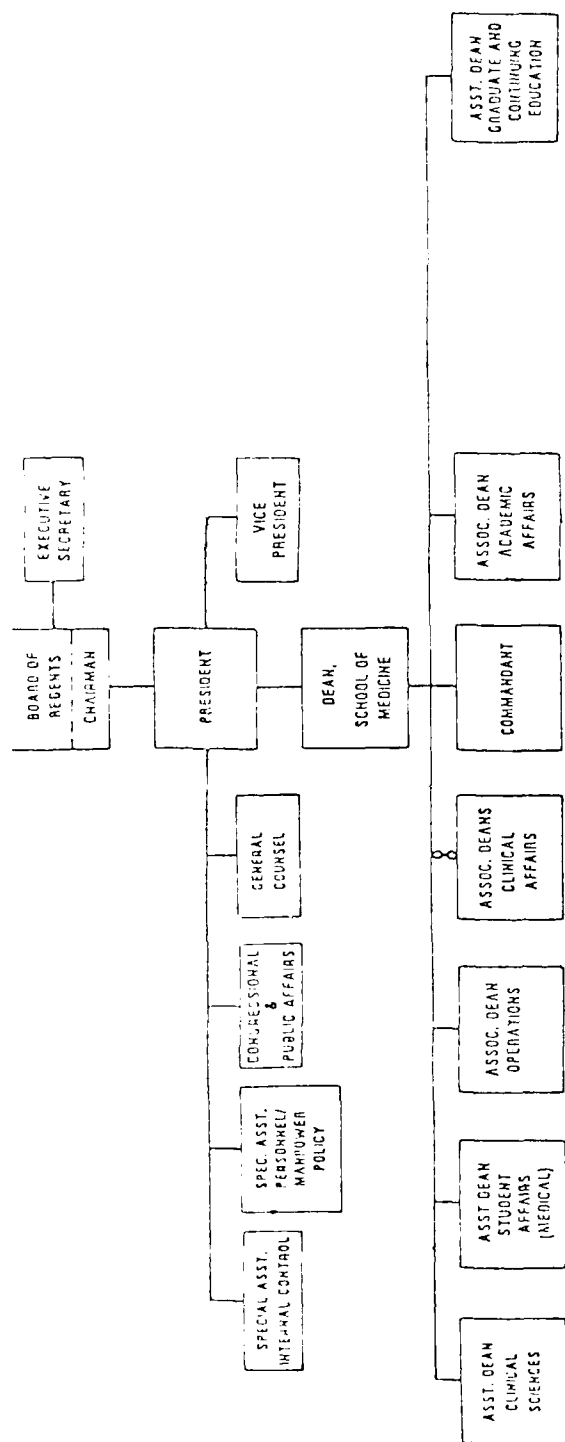


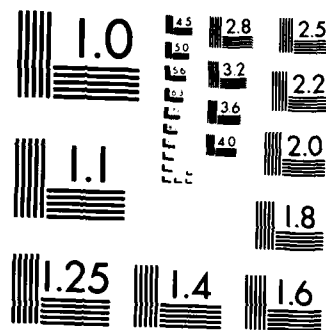
FIGURE 1. Uniformed Services University of the Health Sciences:
Basic Organizational Structure

PROCEEDINGS OF THE AMEDD CLINICAL PSYCHOLOGY SHORT
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

organization may be quite different from that of the Office of Student Affairs at USUHS. This underscores the point that in planning and implementing interventions which are meant to impact on the organization or a large portion of the organization, the psychologist needs to consider the nature of the structure of his/her particular organization and the location of his/her position within that structure in determining the most practical direction(s) in which to proceed.

The Model

The model for organizational stress management used by the Office of Student Affairs at USUHS is depicted in Figure 2. This figure illustrates the assumption that to some extent there is interaction between the individual (I) and the environment (E), or in this case, the student and the university. Out of this interaction a conflict can arise whenever the goals, needs, personality, or perspective of the individual and the environment are not compatible. This conflict produces stress for the individual and the environment.

At this point the psychologist may intervene by assessing the conflict from an interactional perspective, whereby stress is considered the result of an incompatible interaction between the individual and the environment, rather than as the "problem" of either one. In assessing the conflict it is helpful for the psychologist to keep as a frame of reference a profile of the goals, needs, personality, and perspective of both the individual and the environment.

Using the information gathered from the assessment, the psychologist formulates an intervention that involves joint change for the individual and the environment. If this intervention adequately addresses the issues of the conflict, stress is reduced.

The dotted lines in Figure 2 illustrate what occurs if an interactional approach is not applied to conflict that arises from an interaction between the individual and the environment. In this case the psychologist considers the "profile" of either the environment or the individual, and develops an intervention focused on either individual or environmental change. It is likely that stress is reduced to some extent, but because the intervention does not fully address the source of the conflict, ultimately some conflict (and thus some stress) remains.

Note that this model specifically addresses conflict and stress that result from the interaction(s) between the individual and the environment. The model does not presuppose that all stress experienced by individuals or organizations results from this interaction. The model does assert, however, that in a situation in which stress is the result of a conflict in the interaction(s) between the individual and the environment, anything less than an interactional (i.e., organizational) model does not fully address the issues at hand.

It should also be noted that the term "individual" in this model can be used to refer to some identified group (e.g., all students, or all first year students) and the term "environment" can be used to refer to various levels

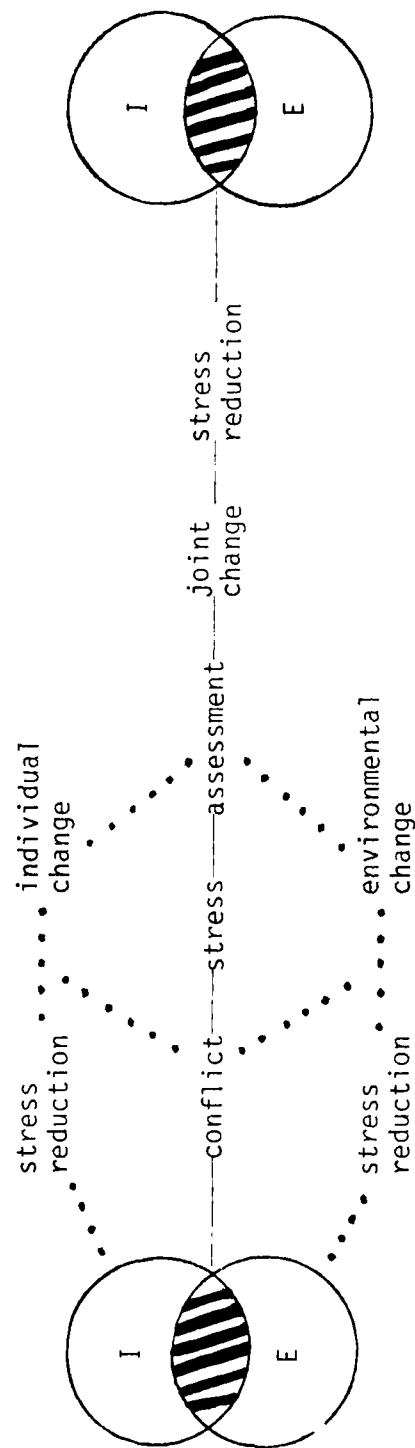


FIGURE 2. Interactional Model of Organizational Stress.

of the organization (e.g., academic departments, staff sections). The model can still be applied in the same manner when these terms refer to groups of individuals or portions of an organization.

This section describes in general terms the occupational stress management model used at USUHS. The following section provides specific examples of how the model has been used.

Practical Application

In the previous section it was stated that the psychologist might be aided in his/her understanding of the conflict between the individual and the environment by formulating a "profile," i.e., to have some picture of the characteristics of the individual and the environment. The profile assembled in the Office of Student Affairs is comprised of four factors: needs (what is necessary for adequate functioning), goals (what is to be achieved), personality (personal characteristics, traits), and perspective (viewpoint). If a student's needs are incompatible with the needs of the university, for example, the psychologist must be able to identify what these needs are. This information in turn influences the direction the psychologist takes in formulating an intervention.

Profiles are formulated chiefly through direct formal and informal contact with senior administrators, staff, faculty and students. This contact is considered essential by Student Affairs for the accurate understanding of the characteristics of students on an individual and group level as well as the characteristics of the various organizational elements of the university. For this reason Student Affairs considers it essential to its functioning to remain within the formal and informal mainstream of activities/issues that potentially impact on the student.

Depending on the nature of the organization in which the psychologist works, remaining within the "mainstream" may take various forms. In the case of Student Affairs, remaining in the mainstream involves, for example, serving on the Admissions Committee, operating a Message Center for students and heading the Orientation Program each year for new students. Participating in the informal mainstream requires the Assistant Dean and Deputy Assistant Dean to interact informally with individuals in various settings, such as social functions, laboratories, classrooms, and the library.

Let us briefly consider examples of the interactional model of stress management as it is used by Student Affairs. Academic difficulty is a common source of stress for the individual student. New students are informed during the Orientation Program that Student Affairs provides services to students experiencing academic difficulty, and programs on time management and test taking skills are offered to students on a group and individual basis. Student Affairs also maintains regular contact with course directors to stay informed of those students having academic difficulties. These students are scheduled for an individual meeting with the Assistant Dean or Deputy Assistant Dean to discuss the situation. Depending on the specifics of each case, the respective course director may be contacted to discuss ways to assist the student. If a student fails a course, the Assistant Dean is

involved directly in the decision process in determining how to remediate the student. The Assistant Dean then meets with the student to discuss how remediation will occur.

Recently a substantial number of second year medical students complained to Student Affairs about the exam format used for the laboratory portion of one of their courses. Information was gathered from the students as to the specific objections they had with the exam format. They were encouraged to also express these objections to their Academic Representative (a student elected by the class to represent them on academic matters). Student Affairs also spoke with the Academic Representative to communicate information it had gathered and to encourage him to consolidate the information in written form, along with recommendations for changes to the exam format, for presentation to the course director. In addition, Student Affairs discussed the matter with the course director to support the interaction between the course director and the Academic Representative. The result was that many of the changes proposed by the students were adopted by the course director.

The above examples demonstrate usage of the interactional model in that they go beyond working with the individual student or a group of students on issues that involve a conflict with the system. Those persons within the system who are in a position to effect changes are drawn into the situation in a manner which promotes communication between the parties in conflict.

Implications

The interactional approach to occupational stress management is a useful tool in addressing and conceptualizing conflict between individuals and the environment in which they work. Without such a tool, stress resulting from this conflict can only be partially reduced, because focus solely on the characteristics of the individual or of the environment ignores some of the factors inherent in the conflict.

The challenge to the psychologist using the interactional model is two-fold. First, it is necessary to conceptualize conflict and stress from a perspective which takes into account the characteristics of both individuals and the environment. Second, it is necessary for the psychologist to assume multiple roles of clinician, administrator, and public relations person. Although an interactional model may in some ways be quite challenging to the skills of the psychologist, it can also be quite rewarding within an organizational setting because the broadness of its scope carries with it the potential to effect change on a far-reaching basis. Given the tremendous impact that the organizational environment has been demonstrated to have on stress experienced by the individual, a model which addresses this issue can be of significant value in the treatment and prevention of physical and psychological disorders.

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The Birth of Army Aviation Clinical Psychology

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Abstract

The United States Aeromedical Center has recently added non-physician professional consultants to its evaluational process for aviation personnel. The first professional area to be added was that of Clinical/Counseling Psychology. The goal of this change is to diversify the consultational base of the Army flight surgeon to insure a more holistic evaluation of persons involved in the Army flight program.

Fort Rucker, Alabama, located in the Southeastern corner of Alabama, is the home of Army Aviation and of the Aeromedical Center. The mission of Fort Rucker is to train pilots for the Army's arsenal of rotary and fixed wing aircraft. Individuals are selected, often times immediately out of high school, for training in what is considered one of the most stressful jobs in the Army, assigned to Fort Rucker for a 9-month training period, and hopefully graduated wearing the wings of an Army Aviator.

Selection of these future pilots is done via a program which has little concern for the person's emotional make-up. No psychological assessment is currently used in making selection for this program. This is in keeping with the policies of the US Air Force and NASA where all emotional factors are considered covered in a psychiatric interview. This interview is most often conducted by a non-psychiatrist Flight Surgeon who performs what is termed an evaluation of the service member's adaptability to aviation. This process is known as the ARMA - Adaptability Rating for Military Aviation. At present no change in this policy is planned or expected.

Where psychology has found its application to aviation is in the area of retention or continuation of flight training. Primarily the flight surgeon is responsible for advising the commander on the medical, to include emotional, aspects of flight. In recent years the flight surgeon has become overwhelmed with the psychiatric aspects of flight and has reached out for help. While psychiatry has been able to offer some help the reality is that aviation does not attract psychiatric clientele in great numbers. The flight surgeon has found the needed help from psychology.

A reason for this lies in definition. Psychiatry tends to deal with abnormal people in a normal environment. Aviation mental health deals with normal people in an abnormal environment. For this psychology is much better suited than is psychiatry because the training of psychologists tends to be more oriented toward the normal population. However, much training in clinical psychology also focuses on the abnormal, and special training may be necessary to help even the psychologist reappraise his/her relationship to aviation. It is this observation that led to the birth of Aviation Clinical Psychology at the Aeromedical Center.

Flying is a very demanding and stress inducing field. It tends to attract bright, achievement oriented, health conscious, and action oriented people. It also tends to attract those who use denial and repression and who do not believe in self disclosure. Another characteristic of many aviators is their bending or breaking of conventional mores. Aviators may be the "cowboys" of the modern world, and most reveal few if any psychiatric problems or symptoms. What they do reveal is stress, personality issues, and neuropsychologic concerns.

In the quest to better determine who should remain flying a consultation activity has been created to advise the flight surgeon in making decisions. Included in this consultative activity is Clinical Psychology, Optometry, and Audiology, with Psychology being foremost involved in decisions of remaining or returning to flight status.

Psychologists possess skills in assessment and evaluation but rarely are knowledgeable in the validity of their devices when applied to the type of people involved in aviation. It was determined that the best way to understand the aviator was to experience his/her world. A means was readily available at Fort Rucker in the form of the Army Flight Surgeon Training Program. It was approved by Health Services Command for members of the Consultation Activity to attend the entire seven-week course, to include 15 hours of in-vivo flight training in the TH-55 helicopter. This training began with the psychologist assigned to the Aeromedical Center in February of 1984 and culminated with graduation and the awarding of wings on March 14, 1984.

Duties of the Aeromedical Psychologist include assessment, evaluation, and training of aviation candidates, rated aviators who have suffered head trauma, rated aviators who have been grounded for emotional reasons, and stress factors in both the aviation candidate and his family. The Aeromedical Center has world wide responsibility for aviation medicine. This means that when a medical problem related to continuation of flight duties exists anywhere in the world, the evaluation must be reviewed or conducted by personnel at the Aeromedical Center. For questions involving psychiatric issues this means a review of psychological testing conducted by local psychologists or conducting further assessment as needed at Fort Rucker.

Personality assessment devices currently utilized are the Minnesota Multiphasic Personality Inventory, the Myers-Briggs Type Inventory,

the Thematic Apperception Test, the Rorschach and Sentence Completion Questionnaires. Each of these must be evaluated in light of the specific defenses found in aviation populations and with the knowledge that we are seldom looking for psychiatric, ala DSM III, diagnosis but for psychological issues related to safe and successful flight duty performance. It is this factor which has led Air Force and Army Psychologists to utilize the TAT more extensively than the Rorschach.

It is not uncommon in crash situations for a survivor to suffer head injury, even with the well designed helmet now worn by Army aviators. Neuropsychological assessment is proving invaluable in determination of the return to flight status question. The Aeromedical Psychologist is frequently called upon to answer such questions. Additional duties include treatment of family dysfunction because of its impact on flight performance, stress reduction program for student pilots, training of Flight Surgeon's on how to effectively utilize psychologists, training of student pilot wives on stresses of flight school and their impact on the family, and consultation with line commanders on emotional factors of their aviators.

Psychology has taken another step forward into the realm formerly belonging exclusively to psychiatry and in doing is revealing to other medical specialties its ability to answer questions of normalcy. Aviation Clinical Psychology is born and in its first year has grown healthy. Further growth is expected with more involvement with prevention of stress, identification of fear of failure syndromes earlier in training, and validity of assessment taking top priority. The future looks bright and any psychologist with a desire to deal with "low flight" may find a rewarding career in aviation.

What's Current in Combat Stress Management?

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A number of recent operational experiences have been educational in refining techniques for combat stress casualty management. These have included: training at the National Training Center and at Fort Hood; peacekeeping efforts in El Salvador, Lebanon, and the Sinai; and combat operations in Grenada, the Falklands, and in Lebanon. A review of some of the lessons learned from these operational experiences will be summarized.

Military mental health professionals have become aware of the varieties of treatment principles for management of combat stress casualties. Among the most commonly known are: PIE, BICEPS, and IMPRESS. The acronyms translate as follows: PIE means Proximity, Immediacy, and Expectancy. BICEPS is Brevity, Immediacy, Centrality, Expectancy, Proximity, and Simplicity. IMPRESS stands for Immediate, Maintain military identity (through actions), Proximate to unit, Reassure (rest, replenish, restore), Expect rapid return to effective duty, Short (simple, spartan), Supervised by qualified AMEDDs. The common denominator to this variety of principles is that treatment occur: quickly, as near to the front as possible, and instill an expectation that the behavior is a normal response to an abnormal situation. The stress casualties must be treated as soldiers (rather than as patients) and reassured of their return to their peers as soon as possible.

The general lessons learned from the recent operational experiences suggest that pre-mobilization preparation is crucial. Both medical and line personnel must be realistically trained to recognize and deal with stress reactions. Realistic stress casualty play must be an integral part of all field exercises. Stress casualties should represent about 25% of the total casualty play. Role players for casualties should demonstrate a range of behaviors to include: fatigue and exhaustion, hyper-reactivity, excessive grief, withdrawal, toxic psychoses, inappropriate or unlawful orders by superior officers, decompensation by over-taxed medical personnel. Realistic casualty play will allow soldiers to learn to recognize stress related responses in their buddies and in themselves; the awareness will allow for more appropriate disposition and treatment. Coping mechanisms must be part of the training program as well.

Mental health personnel must establish good relations with line units to educate the commanders and NCOs of the recognition and treatment principles. Interventions are prevention-oriented rather than reaction-oriented. Commanders need to be made aware of individuals or groups at risk to possible stress reactions. Particular concern should be focused on support troops and members of the chain of command. The support troops may be at risk because of more passive roles during combat. Members of the chain of command are at risk when not maintaining sleep discipline and delegation of authority, particularly during sustained operations. Sound leadership is important in preventing stress casualties. Meaningful activities and training programs are critical in maintaining the morale of the troops.

Commanders need to be aware of the value of promptly returning stress casualties to duty. In operations with little or no replacements, stress casualties can serve as a valuable personnel resource pool. With effective management and treatment, up to 80% of stress casualties can be returned to duty within 72 hours; an additional 10 to 15% can be returned to duty within 96 hours. The recidivism rate for treated stress casualties is about 10%. Unit and peer support for returned stress casualties is important in allowing the casualties to regain confidence in themselves.

Assessments of the status of units are essential. The assessments should include: unit cohesion, expectations, and morale. It is necessary to know how soldiers feel about: (1) their equipment and weapons, (2) their leaders and NCOs, (3) their training and preparations, (4) their morale and that of their peers, (5) the perceived morality or legitimacy of their mission, (6) their expectations toward the mission. Problem areas can be defined for future interventions.

Post-operational debriefings will aid in clarifying mission objectives, expectations, and accomplishments. The group debriefings should be conducted as soon as possible. The debriefing allows for support and feedback to occur. As learning and as support situations, the debriefings can be beneficial for solidifying unit cohesion and morale. Changes can be made to meet new goals and objectives. Debriefings of AMEDD personnel are important to assure appropriateness of treatment policies and clarification of individual responsibilities.

Soldiers need to be confident that their families and property are secure. Family support and information programs will relieve much anxiety in troops who are rapidly deployed. Single parents and single soldiers have similar concerns which must be addressed. Adequate arrangements should be made before deployments occur. This will allow soldiers to focus attention on their operational mission requirements.

With limited mental health resources available, commanders must be aware of the best means of employing the available personnel (to include psychologists). Advance coordination between the line and mental health officers will allow for definition of responsibilities. The coordination must also extend into adequate and realistic training; mental health personnel must be perceived as part of the units they support. Troops must recognize their support personnel are actively concerned in the mission of the unit. Active command consultation programs will help keep commanders informed of the mental health of their units; prevention and realistic, meaningful training are the keys.

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Family Stability and Military Readiness

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Abstract

The readiness of troops for deployment is of primary concern to commanders. There are times, however, when a commander's ability to deploy is adversely affected by situations or circumstances beyond their immediate control. One such factor may be the effect of environmental or familial stressors on individual soldiers. The authors contend that the ability to mobilize is directly proportional to the stability of the soldier's family and their living situation. As a majority of the members of the military currently have families, the effects of systemic maladjustment within soldier-families can impact well beyond family boundaries (Landrum, 1979; 1980).

This paper will examine the role of family and individual readiness for stressful duty as well as models of family functioning. The authors suggest that military psychologists can assist commanders by identifying soldier-families that are at risk because of personal, social, or other factors and by developing appropriate interventions. A proposed model for investigating the dimensions of the family system that facilitate adaptation of military families will be presented. Implementation of similar studies and positive interventions in conjunction with the military's renewed interest in the family is encouraged.

The publication of the Army Family White Paper (1983) is an indication of the continued interest in research on the military family by service personnel. Much of the current and past literature addresses the myriad external factors that negatively affect the soldier-family (David & McDonald, 1980). Encumbrances such as long working hours, unaccompanied duty assignments and insufficient compensation are well documented (Hunter, 1978; 1980; McClellan, Dahl, & Hunter, 1976). More recently, the

emotional problems is placed on the environment (both physical and social) and appropriate interventions come to resemble advocacy (Knitzer, 1980).

Cowen (1984) has noted that much of the prevention literature is clouded by fuzzy thinking and even fuzzier research. Before we move further, it is necessary to come to some understanding on what the word prevention means. In particular, we must understand what primary prevention means. Caplan (1964) defined primary prevention in mental health as follows:

...lowering the rate of occurrence of new cases of mental disorder in a population...by counteracting harmful circumstances before they have a chance to produce illness. It does not seek to prevent a specific person from becoming sick. Instead, it seeks to reduce the risk for the whole population so that although some may become ill, their numbers are reduced (p. 26).

Bower's (1969) definition is:

Any social or psychological intervention that promotes or enhances emotional functioning, or reduces the incidence and prevalence of emotional maladjustment in the general population (p.498).

Goldston (1977) uses the following definition:

...activities directed to specifically identified vulnerable high risk groups who have not been labeled psychiatrically ill and for whom measures can be undertaken to avoid the onset of emotional disturbance and/or to enhance their level of positive mental health (p.27).

Although these definitions are all somewhat different, the similarities outweigh the differences. Each definition talks about intervening in populations (as opposed to specific individuals) and each speaks toward enhancing psychological functioning so that the disorder or maladjustment does not occur. Helfer (1982) has applied the conceptual framework of primary prevention to the area of child abuse. He defines primary

CONCEPTUALIZING PREVENTION IN DOMESTIC VIOLENCE

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George Albee (1959) discovered over two decades ago what those of us in the mental health business have been avoiding ever since. In brief, Albee found that (1) there were more people in need of professional mental health services than could be served by the professional manpower available and (2) that the distribution of resources left many people without access to professional services (notably those in minority status, children and the poor). A more recent assessment of the prevalence of mental disorders (Robbins, et al, 1984; Myers, et al, 1984; Shapiro, et al, 1984) has recently demonstrated that the lifetime prevalence of specific mental disorders (that is those diagnosable under DMS III) is approximately 32.6%. That is, 1 out of every 3 people will experience an diagnosable mental disorder during their lifetime. Even more disheartening is the fact that these data do not include other conditions such as child abuse or spouse abuse.

Following Albee's (1959) classic paper, there was a burst of enthusiasm for primary prevention (Bellak, 1969; Caplan, 1964; Cowen, 1967; Kelly, 1968; Pinderhughes, 1966). Those interested in prevention found that powerful forces were mobilized to prevent prevention (Albee, 1979). Adherents to the medical model of emotional disturbance strongly argued that (1) the cause of any emotional disorder was a weakness or defect internal to the person effected, (2) that treatment and medication were the cure, and (3) that in any case we did not know enough about prevention to do anything worthwhile. Using the defect model, responsibility/blame for emotional problems is placed upon the patient. Those interested in prevention argued that everyone was able to live free of emotional disorder and that the cause of most emotional problems could be found in the stresses of living and the abuse of power by those in authority. Using the competency model, primary responsibility for

FAMILY ADVOCACY: AN EXPANDING ROLE
FOR PSYCHOLOGISTS

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Abstract

Psychologists in both civilian and military settings have traditionally not been involved in either the design or implementation of family advocacy programs. While psychologists are routinely involved in providing clinical services (treatment and/or evaluation) for abusing families, and often sit as members of the local Family Advocacy Case Management Team (FACMT), they are only rarely involved in prevention (both program design/evaluation or training) and/or advocacy processes. This symposium argues that there is a crucial role that the psychologist can play in the primary prevention of domestic violence. A conceptual model of prevention is presented and applied to the specific issue of domestic violence. The role of the psychologist in training family advocacy personnel in primary and secondary prevention is discussed. The symposium concludes with a panel discussion on the role of the psychologist in the family advocacy arena.

The views of the authors are their own and do not purport to reflect the position of the Army or the Department of Defense.

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Acknowledgments

The authors wish to acknowledge the contributions of Major Itamar Barnea, Psy. D., of the Israeli Air Force. As a colleague and friend, he has increased our understanding of family life in the military. Shalom Aleichem. Appreciation is also extended to LTC John D. Shoberg, Ph.D., MSC, Chief, Clinical Psychology Service and the Director of the Clinical Psychology Internship Program, Silas B. Hays Army Community Hospital, Fort Ord, CA, who encouraged us in our endeavor to write this paper.

however, that military readiness can be seriously compromised by factors that are not necessarily indigenous to the environment. It is only through identification and remediation of those factors that the military can optimize its readiness.

In summary, the present paper outlined the Army's concern for family wellness. Consideration was given to the problems inherent within the military environment and those within families. A model of family functioning was delineated as well as the application of this model in assessing family stability. The authors maintained throughout that impaired family functioning adversely affects military readiness.

Data analysis can be handled by any of the available statistical packages (i.e., SSPX, BMDP, or SAS). The first step would be an examination of the item reliabilities. The researchers would thus be enabled to evaluate the internal consistency of the dimensions of family functioning. The next step would involve the principle component analysis of the item pool to further demonstrate the homogeneity of the postulated dimensions of family functioning. Next, the extent of correlation between the dimensions would be evaluated by employing a simple Pearson correlation procedure. It is at this stage of the research that mean-differences between the groups can be evaluated. One might also choose to do a discriminant functions analysis to insure that the three groups are indeed distinct. Any differences noted would be of particular importance in an attempt to cross-validate the developed scale.

Stage 3:

This stage of the pilot study is significant for two important reasons: First, it would attempt to validate the findings of Stage 2 regarding the factor structure of the dimensions of family functioning. Second, it would also include information such as the frequency of use of Army Community Services, Social Work Services, Army Emergency Relief, and other similar supports provided by the military. For the civilian control group, the use of corresponding civilian resources would also be examined.

Families would be recruited in this phase in a manner similar to the preceeding two stages. Maladjusted military families would be recruited from the roster of recipients of ACS, SWS, and related agencies on post. Adjusted military families and the civilian control group would be recruited through local advertisements. A background sheet listing a diversity of demographic and related information would be administered along with the dimensions of the family functioning scale. At this stage of the research, the authors suggest a sample size of approximately 200 families per cell. The data analytic techniques would follow those described in Stage 2. From these data, the authors believe that sufficient information may be attained to assist in targeting vulnerable families. Remedial or preventive measures could be undertaken that would represent intervention primary to the development of acute family crises. The authors believe that it would be useful to administer the family functioning scale as apart of the married soldier's in-processing experience.

There are a number of issues evident that were not raised in the suggested pilot study. Authorization to conduct research, funding, and additional resources represent but a few of the significant obstacles yet to be addressed. As outlined, the study does not address many of the inherent environmental factors that make successful functioning of a family within the military community difficult. It is the contention of the authors,

then be analyzed to identify those factors predictive of the McMaster model. In Stage 3, the retained items would be administered to yet another sample of families. If the six dimensions are identified, this would demonstrate not only the usefulness of the instrument but also the validity of the McMaster model.

Stage 1:

In order to develop items that reflect each of the dimensions of family functioning, three groups of families would be recruited for participation: maladjusted and adjusted military families and a civilian control group. The maladjusted military family would be accessed from the records of Army Community Service and Social Work Services. It is believed that use of the services provided by these agencies explicitly identifies a given family as troubled. The adjusted military family would be recruited from advertisements in post newspapers (e.g., Fort Ord Panorama). Finally, a civilian control group would be recruited from advertisements in the local community newspaper.

A team of researchers would interview each of the families that are identified. The purpose of these interviews would be to solicit specific information regarding family functioning on the six dimensions from each of the families. The authors believe, in addition to the expectable variation within any given family or groups of families, that there would be identifiable functional differences between the groups of families. For example, the authors expect that maladjusted military families are characterized by inflexible methods of behavior control, while adjusted military families are more flexible.

The next step involves developing questionnaire items on the basis of the interview data. An independent team of raters would then evaluate the face validity of the generated items and sort them into groups representing the dimensions of the McMaster model. Any items failing to achieve an inter-rater agreement level of 80% would be discarded. Once completed, the retained items would be assembled into a master questionnaire. A Likert response format would be used to score the questions as well as to limit the influence of stylistic responding (i.e., acquiescence or social desirability, Jackson, 1974).

Stage 2:

This stage is comprised of two parts: administering the items to new groups of adjusted, maladjusted, and civilian control group families and statistically evaluating the factor structure of the item pool (i.e., the correspondence between the six dimensions and individual items on the basis of responses by family members). The manner of recruiting families for participation would follow the one used in Stage 1. The sample size can now be augmented to a larger size, limited only by available resources.

(Walsh, 1982) or communication patterns (Haley, 1963; 1976). However, unless such concern is multi-dimensional in scope, there is a high probability that significant information will either be lost or ignored. A costly consequence is the failure to truly represent a military family's functioning and thus perpetuate the misuse of potentially effective family support programs. Such an oversight can impede the development and implementation of much-needed preventive programs. This failure to comprehensively assess family functioning may thus result in added expense to the military in a number of ways.

There is little doubt that the current methodology for conducting family assessments is time-consuming. Even more problematic are the situations in which there is little structure to guide such endeavors. A model of family functioning, the McMaster model (Epstein & Bishop, 1981; 1982), exists and appears to have usefulness in developing a pilot study such as that suggested within this paper.

The McMaster model is comprised of six dimensions: **Problem-Solving, Communication, Roles, Affective Involvement, Affective Responsiveness, and Behavior Control.** Problem solving generally refers to the manner in which families negotiate, contend with, or resolve crises as they may arise. Communication involves the degree to which the content is clear, explicit, and unambiguous, as well as the degree to which it is direct or indirect with respect to individual family members. Roles refer to who in the family system dispenses responsibilities or duties and who is responsible for monitoring the completion of such duties. Affective involvement generally refers to the extent to which family members are involved with one another. Emphasis is placed on discerning how little or how much family members are involved with one another. Affective responsiveness is concerned with who is responsible for, or responsive to, the needs of the family. Finally, behavior control is concerned with how flexible families are in relating to one another. Discerning how flexible a family is provides important information about health or pathology within the family system.

The dimensions of family functioning articulated by Epstein and Bishop provide a useful framework for evaluating soldier-families. The six dimensions can be used to distinguish between troubled and un-troubled families and when combined with pertinent demographic information, the authors believe that a more precise effort can be made to target preventive treatment programs. Refinement of a simple assessment instrument that can be derived from the pilot study suggested below will allow timely identification and referral to appropriate resources.

A Suggested Pilot Study

There would be three stages to the development of the proposed pilot study. Stage 1 would involve the generation of items to reflect the six dimensions of family functioning. Stage 2 would involve the administration of the items. The items would

approximates the missionary experience (i.e., separation from family, home, and culture) some parallels may be drawn.

Cureton (1983) developed a three-dimensional schemata for identifying successful missionaries. This method includes a job-function analysis, a value orientation scale, and a personality checklist. This evaluation procedure has elements that can be easily adapted to the military community, and the identification of personality patterns that are consonant with the military can be important to readiness and job satisfaction.

Britt (1983) provides additional research which addresses readiness and the prediction of job success that supports findings obtained by Tucker (1974), whose research involved Naval personnel assigned outside CONUS. Britt concluded that the most influential predictor was past behavior and that a history of moodiness and depression did not augur well for positive adjustment. It was suggested that preparation for overseas assignments should include providing information about the multiple factors that might prove stressful. This procedure would certainly correspond to the work of Meichenbaum & Jaremko (1983), which suggests inoculation to stressful situations by the implementation of stress reduction and prevention programs. Creel's (1981) identification of certain "at risk" individuals and groups within a military community also implies such prevention should be a part of command consultations.

White (1983) examined the effects of multiple separations on missionary families and children and classified separations into two categories: developmental and situational. Developmental separations were the predictable transitions that are a part of the human life cycle (i.e., children leaving home). Situational separations were generally less predictable and more traumatic. The soldier-family can be assumed to be equally vulnerable during times of separation. The sequence of stages of adjustment to separation that White delineates can be a helpful way of understanding the process.

Models of Family Functioning

The issues and research cited above provides an understanding of the many problems that confront military families and their counterparts in the civilian community. However, the insufficient attention given to the contributions of the family unit can perpetuate over-concern for either individual contributions to military maladjustment (e.g., poor attitude or little motivation) or the demands of the military system. Identification of relationships, roles, and responsibilities of family members to each other and to the family are essential. An adequate understanding of these factors will enable researchers to gain a greater appreciation for the interaction between family units and their respective environments.

There are several ways to conceptualize family functioning. For example, one can focus on separation-individuation issues

Army regulations 608-1 (Army Community Service) and 608-10 (Child Development Services) are examples of documents which have paved the way for such ideas as the Exceptional Family Member Program and the Army Family Action Plan.

The authors were fortunate to have been briefed on one unit's implementation of the Family Action Plan (1984) at the 8th Combat Support Hospital by the commander, LTC Jason Lozada. Subsequently, the components of this plan were seen in operation during a field training exercise, where soldiers who remained in garrison were detailed to assist the family members of soldiers in the field. The merits of General Wickam's 1984 plan were immediately apparent in just such an environment.

Research on Individual and Family Adjustment

Not surprisingly, most researchers address the specific influences of military life that negatively impact on soldier-families. While this strategy is a reasonable one, insufficient consideration is given to the family itself. The authors believe that a consequence of this oversight is the failure to identify specific factors which disable some families and not others (McCubbin & Lester, 1977). The authors posit that most, if not all, soldier-families encounter difficulty in adjusting to the rigors of military life; however, only a minority of these families constitute "problems" for the family support systems in the service. Unfortunately, this minority uses a vast amount of the available resources. This reality suggests that there are specific problems inherent in some soldier-families that predispose them to turmoil.

While there is little doubt regarding the necessity to address the needs of the troubled soldier-family, it also appears to the authors that precious little attention is given to the many elements that contribute to successful adaptation to the military community (McCubbin, 1979; 1980). Obviously, there are more families in the military that do not use the various social service programs that constitute the "safety net" for the system. A pessimistic explanation of this circumstance is that soldiers are motivated by pride, or anxiety, to deny themselves the opportunity to receive assistance (Spellman, 1976). A more sanguine explanation addresses the likelihood that families do not seek services because they simply do not require such help.

As psychologists, the authors believe that there are unique contributions that behavioral science can make to the military community. Treatments such as family, child, and marital therapy are among services already provided by our profession. No less important are the preventive and research aspects of our contributions which may serve to multiply our effectiveness.

Of potential use to the military is the body of literature surveying the readiness of missionaries to work in the field. Several recent articles have examined the criteria for successful overseas missionary work. To the extent that the soldier-family

identification of factors that are internal to the individual and the family system, and their impact upon adaptation to transitional states, has currently been receiving increased attention (Barnea, 1984; Roland, 1984).

As a precursor to this later research, Montalvo (1968) and McKain (1970) examined the degree of integration which family members experience within the military community. Montalvo noted that military wives who failed to become sufficiently involved in either the military or civilian community encounter a higher number of familial problems than their more involved counterparts. He observed that problems in adjusting to the military were also related to inadequate use of available support networks (i.e., neighbors or Army-provided resources). McKain further noted that foreign-born dependent spouses had the greatest adjustment difficulty. Other studies have also demonstrated that this was especially evident when they insulated themselves from resources that may have been readily available to them (Kim, 1977; Lee, 1975).

Of the problems experienced by military families two have particularly high currency: mobility and overseas duty assignment. With the upheaval that is inherent to relocation, considerable tension is encountered by the military family (Rosenzweig, Gampel, & Dasberg, 1981). A failure to adequately prepare a family for such a transition almost always insures the likelihood of problems developing (Peck & Schroeder, 1976). When these difficulties are encountered by families that may have systemic deficits (i.e., problem-solving, communication, or financial strains), the results can be very unfortunate (McCullah, 1979). Recent experience at this duty station with dependents that have attempted to cope with an absent sponsor is a dramatic example of what can happen if adequate preparation of the family system is not an integral component of a plan for mobilization and readiness (e.g., suicide of a dependent child).

Assignment of families to duty stations that may be remote from familiar resources also presents them with a plethora of problems (McKain, 1973). Language barriers, cultural differences, and loss of social support groups are some of the factors that can exacerbate a troubled family's coping ability or serve to decrease a well-functioning family's resources (Hoffman, 1980). To the extent that families are ill-equipped to handle these and related problems, there can be little doubt that a soldier's work performance is adversely effected (Savell, 1979; Woolfel, 1979). Additionally, the likelihood of retaining such soldier-families is not great, particularly if wives perceive the "system" as uncaring (Derr, 1979; Hickman, 1981).

In order to more effectively insure the readiness of military personnel, the Army initiated several programs to aid military families in dealing with the pressures such as those indicated above. It is the contention of the military system that soldiers are likely to perform more effectively if the special needs of their families are adequately met by the Army.

prevention in child abuse as follows

any maneuver that occurs to or around an individual (primarily an infant) the stated purpose of which is to prevent child abuse and neglect from ever occurring to that individual. A second subset of primary prevention can be stated as a socially defined subset whereby a program or maneuver is proposed or initiated to change the whole societal structure, thereby preventing abuse and/or neglect from ever occurring....these changes would effect large numbers of people, rather than the individual (p.252).

Within the field of domestic violence (a field that is greater than the child abuse problem addressed by Helfer (1982) and more narrow than the other definitions quoted above), I propose the following definition: Primary prevention of domestic violence involves those activities designed in advance to prevent domestic violence from occurring. Interventions may be addressed to large groups of people, social institutions or social norms. Pro-active primary prevention interventions are aimed at reducing environmental and/or social stressors and reactive primary prevention interventions are aimed at better equipping groups of people to cope with stressors that cannot be eliminated by pro-active interventions. Any program that focuses on groups of individuals identified as being at risk for domestic violence is secondary prevention (see Helfer, 1982).

The need for preventive programs in the area of domestic violence is clear. Despite the large amount of money federal and state governments have spent on domestic violence programs, there is little evidence that the incidence or prevalence of domestic violence has decreased. Indeed, the closer the investigation the greater the incidence. Helfer (1982) has estimated that 1.5% of all children are abused in any given year. Russell (1983) has recently reported that in a survey of adult women 20% reported being sexually abused prior to the age of 14. These same women indicated that the abuse was reported to the police only 5% of the time. The Department of Defense (DOD) reported 2,800 cases of child abuse in the first half of FY 82 (for a yearly estimate of 5,600), and 3,725 cases in the first half of FY 83 (for a yearly estimate of 7,450). During these same periods there were respectively 2,026 and 5,809 cases of spouse abuse. It is very difficult to estimate the "real" number of domestic violence

incidents. It is clear that only a small minority of cases are reported. Even if the case is reported, it is often inaccurately investigated or will be lost to follow-up. This loss occurs at every point in the case flow and is illustrated in Figure 1.

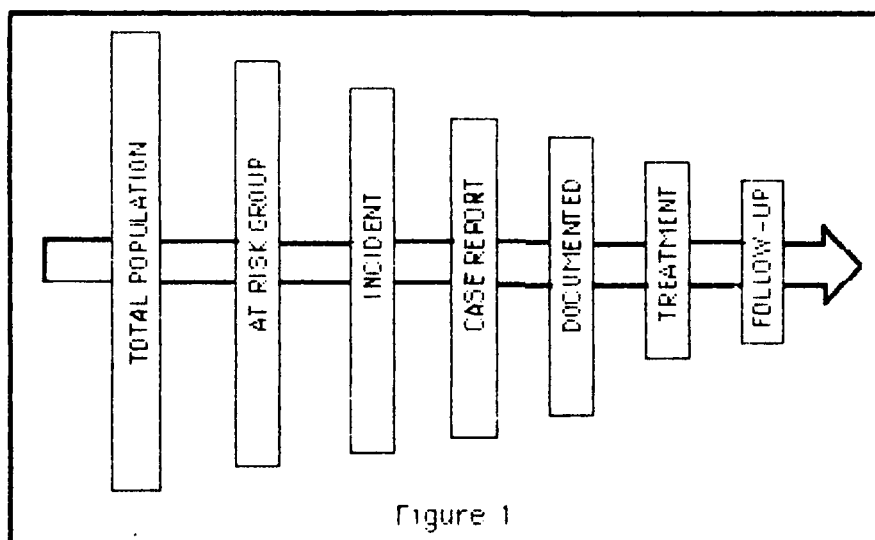


Figure 1

Conservative estimates of this loss are as follows. Approximately 25% of the incidents of domestic violence occur in families who are not considered as being at risk. No program to identify at risk populations would effect these families. Many at risk families do not exhibit domestic violence and thus interventions targeted at this group risks the stigmatizing effect of labeling (Rappaport & Cleary, 1980). Among those who actually committ acts of domestic violence, only perhaps 25% are reported to the proper authorities. Once the case is reported it must be investigated. Unfortunately, a number of false positives (reporting a case as "founded" in error) and false negatives (reporting a case as "unfounded" when it actually is a case of domestic violence) occur. The loss at this stage is estimated to be 30%. The problem is complicated further by the often untoward negative effects that occur as a result of reporting (Newberger, 1983). Among the "founded" cases 20% avoid treatment by refusing therapy, or moving out of the area. Of the cases that actually enter treatment recidivism is high (Williams, 1983). Cohn's (1979) evaluation of 11 federally funded child abuse demonstration projects found that reabuse occurred in from 47-62 percent of the cases. Reincidence of severe abuse occurred in 56% of the cases regardless of the

treatment used.

A review of the model described above indicates that given the 700,000 cases of child abuse and neglect reported to the National Center for Child Abuse and Neglect in 1978, only 196,000 cases entered treatment. Using a 50% recidivism rate only 98,000 (or 14% of the reported cases) cases would have been treated successfully. Despite the fact that only a very small percentage of domestic violence cases are reported and actually reach treatment, most of our time, energy and resources are spent in either investigation or treatment. The medical/defect model requires this. This process of treating people declared ill is in a direct violation of the major finding of the public health field, notably that no disease or disorder has ever been eradicated by treating those individuals who become ill. In all successful cases of disease control the causes of the disease must be removed first. It is my contention that in order to respond appropriately to the problem of domestic violence we must place our primary emphasis on prevention. To be satisfied with treating casualties will only guarantee more cases than we can possible treat.

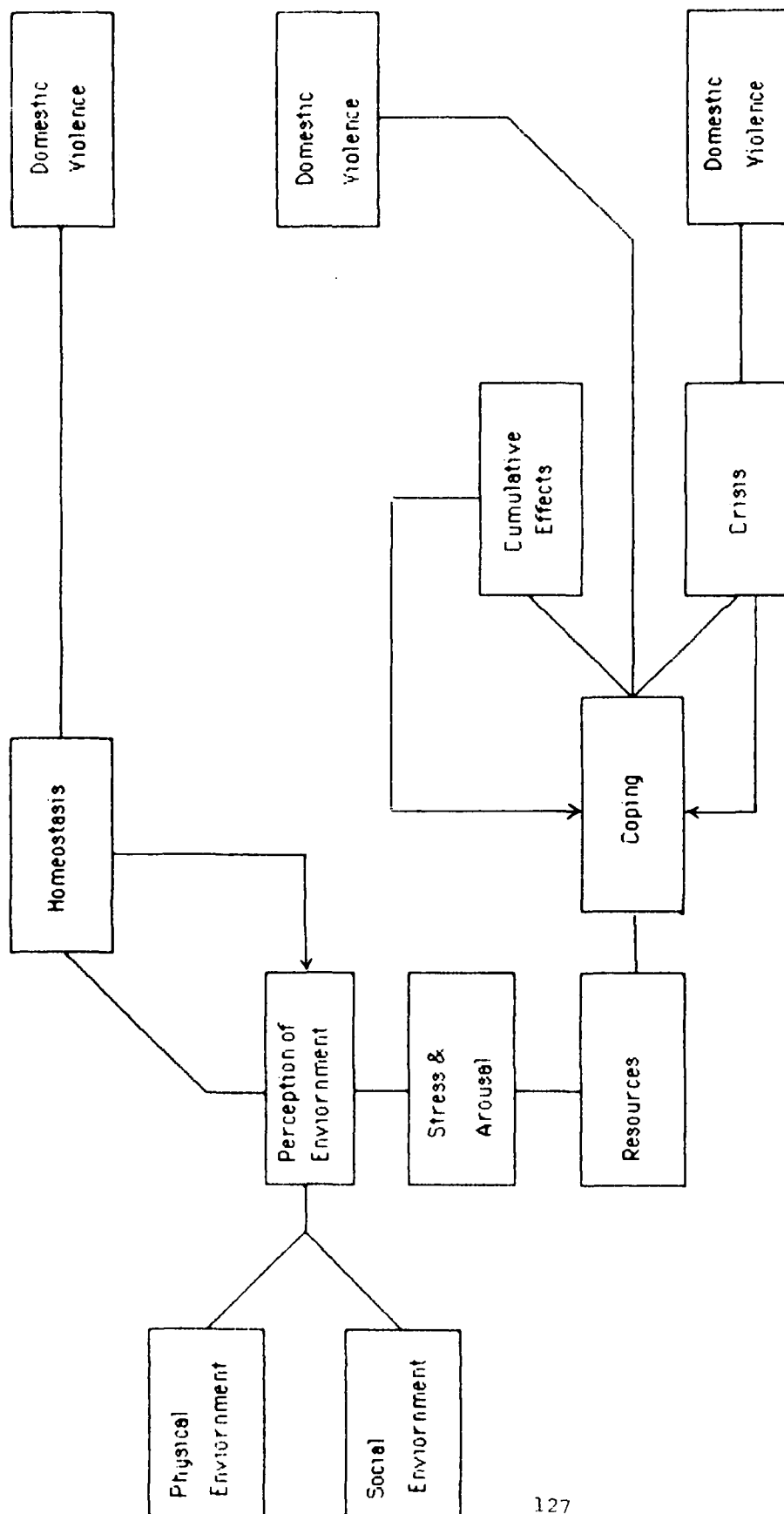
Before a model for the prevention of domestic violence can be presented we need to spend some time identifying the potential causes of domestic violence. This is a difficult and potentially misleading endeavor. First, we must acknowledge that there are multiple causes for all behavior including domestic violence. To search for a single cause will not be productive. Second, our training encourages us to search for variables that are consistent with the medical model. Thus, for most psychologists variables such as psychopathology, intelligence, and coping skills will be easily recognized. Other variables such as crowding, personal defensible space, social norms, or institutional sanctions may seem alien. With these limitations in mind, let us review quickly the broad variables that would appear to be significant in the etiology of domestic violence.

Before looking at individual causative variables, it is instructive to look at the broad scope of environmental variables. Environmental psychology has presented clear evidence that the physical environment has a significant impact upon psychological functioning (see Wandersman, et al, 1983). Of particular interest are studies demonstrating a relationship between crowding, psychological health, and the maintenance of interpersonal relationships (see for example Karlin, Epstein, & Aiello, 1978). Still other environmental variables such as noise level and the physical design of buildings appear to have effects upon psychological functioning. The social environment in which the individual or family lives also impacts upon psychological functioning. This environment ranges from

the micro environment of mother-infant bonding (Frank, 1981) to the macro environment of social networks (Gaudin et al, 1983; Powell, 1980; Mitchell, 1980). While the social and physical environment must be considered in understanding domestic violence, it is clear that each individual experiences the environment differently. These individual differences in perception are crucial, indeed they may be more crucial than the actual environment itself. If the environment is evaluated as acceptable, there is little need for coping or problem solving. Positive feedback mechanisms act to maintain homeostasis and the situation becomes relatively static. Societal or group norms can result in an acceptable evaluation of an environment that others might consider unacceptable. One is quickly reminded of the abusing family who sees abuse as a acceptable way of life and resists all attempts at inducing change.

If the evaluation of the environment is negative, and the environment is seen as unacceptable, stress and arousal results. This stress is mediated by the community and personal resources available to the individual. If the resources are not adequate to buffer the individual against the stress, some form of coping must occur. If this coping is successful the situation is resolved. Depending upon the coping behavior used, the environment may have been changed or left intact. Unfortunately, there is growing evidence that even successful coping can have a cumulative effect that is negative or psychologically harmful. If the attempt to cope is unsuccessful a crisis results. Although these two pathways (successful coping and crisis) are different, both can result in domestic violence. We are all familiar with the use of violence as a problem solving technique. The father, for example, feels threatened by his wife's success and to re-assert his dominance, beats her in such a case. The important point here is that this situation is not a crisis situation. It occurs repetitively when particular problems occur. Other incidents occur as a last ditch attempt to resolve a crisis, are accompanied by significant psychological turmoil, and are usually evaluated by both spouses, after the fact, as unacceptable. Cases of domestic violence that arise out of a crisis situation are among the easiest to treat.

The model presented above is represented graphically in Figure 2. While it is somewhat simplistic it allows us to be more specific in the types of interventions that we make. Interventions that seek to alter the environment (both physical and social) or the perception of that environment are examples of pro-active primary prevention. Psychologists interested in these types of interventions will become involved in housing design, noise pollution reduction or altering the perception of



PREVENTION MODEL

Figure 2

environments. Reactive primary prevention occurs after the environment has been evaluated as unacceptable. Reactive primary prevention attempts to increase the resources (both personal and community) available to act as a buffer against the stress. Psychologists who become involved in the design and implementation of child care centers or the development of unit support networks, are working in this arena.

Secondary prevention begins with the provision of services to those individuals who are in distress and are struggling to cope with an unacceptable environment or event. If their coping is successful the stress is resolved. If the individual is required to cope repeatedly with stressful situations the cumulative effects may finally precipitate violence. Note that violence can be used as a successful coping strategy. If the violence removes the stressor it is likely that violence will be used again. The use of violence as a coping strategy is qualitatively different from the use of violence to resolve a crisis situation. In a crisis the situation is becoming increasingly distressful and attempts to cope are unsuccessful. This produces a dramatic increase in emotional turmoil. Domestic violence, like suicide may be the result.

Tertiary prevention begins once the incident of domestic violence has taken place. The case has been reported and a formal intervention has begun. Treatment is typically offered to the victim and perhaps the perpetrator if he or she is willing to enter treatment. Unfortunately, the damage has now been done. It cannot be undone via therapy. More importantly, offering therapy will in no way decrease the incidence of domestic violence. The violent act must occur for treatment to be offered.

By this point my bias should be clear. Domestic violence must be addressed in a primary prevention framework. This is not in any way to imply that secondary and tertiary prevention efforts are undesirable or unwanted. Individuals in distress must be offered assistance. Offering treatment for violent families is crucially important. It is delusional, however, to hope that these efforts will in any significant way reduce the overall incidence or prevalence of domestic violence. The manpower pool is too small to offer the needed secondary and tertiary interventions. If we truly want to make a contribution we must train paraprofessionals to provide secondary and tertiary services (under skilled supervision) and refocus our efforts on primary prevention. Significant forces will act to block this move. The medical/defect model predominates and many have a strong need to keep the situation as it is. Our training often makes primary prevention activities alien and uncomfortable. It is simply easier and more comfortable to allow the victims of abuse to be referred into the clinic. This strategy is ineffective and only insures an unending flow of patients.

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SECONDARY PREVENTION, NONPROFESSIONALS, AND PSYCHOLOGY: INTERMEDIATE SOLUTIONS AND EXPANDING ROLES

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Introduction

Domestic violence has emerged as one of the crucial social problems confronting us in this decade. Child and spouse maltreatment are subjects of increasing attention. Recognition of the influence of domestic conflict on duty performance and morale has resulted in the Army Family White Paper (1983). In this document, the Army Chief of Staff stated that the welfare of the military family and the quality of life in military communities are critical components of Army readiness. To underscore that view, the Army Family Advocacy Program (AFAP) was established. As behavioral scientists whose mission continues to be the conservation of manpower, and whose ethical stance requires attention to quality of life issues, Army psychologists must commit themselves to an active, innovative role in Army family advocacy.

Recent research has suggested that the reported incidence of family violence in the Army is increasing. James, Furukawa, James, and Mangelsdorff (1984) reported an increase from 35 to 115 reported incidents of child maltreatment per month during a 27 month reporting period that ended in 1980. During the first half of FY 83, 410 confirmed cases of child maltreatment per 100,000 children were reported across military services (*Army Times*, 29 Oct. 84). Incidence reports of spouse abuse have followed a similar trend, with the reported incidence rate more than doubling, from 2026 cases during the first half of FY 83 to 5809 cases during the same period in FY 84. While these increases are more likely to reflect greater attention to reporting incidence than actual increases in rates of abuse (Wichlacz, Randall, Nelson, and Kempe, 1975), the rise in detected abuse points to a real demand for an increase in available mental health resources.

Attention to the quality of life in the military and the quality of recruited personnel has helped to reduce the incidence of family violence. However, some of the factors contributing to maltreatment (e.g., frequent PCS, FTX, housing) will continue to challenge the military family (Miller, 1976). In addition, planning doctrine resulting in force realignment will probably decrease the number of military behavioral scientists available to support these families. Consequently, psychologists as well as other behavioral scientists must respond to increasing demands for services despite prospects of a dwindling manpower pool. This is not a new dilemma for the mental health field. In surveying future needs for mental health resources, George Albee (1959) argued that:

What we need are techniques and methods enabling far more people to be reached per professional person. If we do not at present have such techniques, then we should spend time looking for them. The logic of the manpower situation in which we find

ourselves makes other solutions unrealistic (p. 254).

Cowen (1973) suggested that intervention is most effective if carried out at the community level. As others have suggested, primary prevention with an emphasis on family wellness should remain the goal of the Army Family Advocacy Program. Nonetheless, secondary prevention efforts devoted to intervening with high risk and identified abusive families are necessary. Justification and funding of programs, particularly those in the "people business," is usually based on a pathology-and-rescue model (Signell, 1983). The oft-quoted adage, "If it ain't broke, don't fix it," underscores the military's adaptation of this model, and suggests that secondary prevention with families who are broken, or at least showing wear around the edges, is likely to be a more saleable intervention strategy in the military community while serving an ongoing need for timely intervention.

Military families are reluctant to seek help through referral to community agencies. Spouses with family and personal problems tend to turn towards informal helping resources within the military subculture (Beattie, 1981). The stigma associated with mental health consultation continues to be pervasive (Miller, 1975); and the typical problem-solving strategy of looking for readily available, concrete solutions will likely continue, making preventive programs only marginally appealing in the near future. Even among more "psychologically minded" families, there is frequently a marked resistance to early acknowledgement of distress if they are experiencing violence or threats of violence. Often such families use other, less formal social support systems such as enlisted and civilian paraprofessionals, volunteers, and indigenous helpers. Psychology can play a significant role in this area, bringing a unique perspective and some special skills.

Roles for Nonprofessionals in Secondary Prevention

The clinical research of recent years is full of reports of the "nonprofessional revolution" in mental health (Gershon and Biller, 1977; Sobey, 1970). Nonprofessional helpers are not a creation of community-minded social scientists, however. People have generally been more likely to seek help from neighbors, close friends, relatives, and community professionals held in high esteem such as doctors, lawyers, and clergy (Gershon and Biller, 1977). Mitchell and Trickett (1980) argue that an individual's social network is predictive of successful adaptation to a variety of crises and day-to-day challenges. They describe the effective indigenous nonprofessional helper as having a knowledge of informal resources and an orientation towards assessing and mobilizing networks. They suggest that aid to troubled individuals might best be administered by strengthening the natural caregiving network.

This strategy is particularly appealing for application to the transient military population. Many mental health workers in the military can no doubt call to mind one of those "neighbors" who somehow knows how to get things done; or who, escorting a friend from the clinic, says, "I think we can handle it from here, Doctor." These informal helpers tend to alert professionals to families and individuals who all too often fall through the cracks in the human service network. The social networks and natural helpers are generally the glue that holds families together during extended

absences of the service member due to hardship tours, FTXs, and TDYs (Pendleton, 1976). Serving as surrogate parents, aunts, uncles, this system often functions as an extended family. Sobey (1970) studied 10,000 nonprofessionals in 185 different NIMH-sponsored programs, and summed up the contribution of the nonprofessionals in this way:

For innovative roles which nonprofessionals have so often been asked to assume - the teacher-mom, home visitor, reach-out aide, etc. - the flexibility and spontaneity of nonprofessionals is seen as a primary asset (p. 178).

The effectiveness of nonprofessionals serving in mental health roles has been the subject of considerable research (Gartner, 1979; Durlak, 1973; Sobey, 1970). As with much of the mental health outcome research, there is considerable variance in the variables examined and the methodological rigor of the studies. Since Rioch's demonstrated success employing housewives as counselors (Rioch, 1967), nonprofessionals have been used in a variety of roles. Reviewing over 300 references in the literature, Durlak (1973) found only six negative reports concerning nonprofessional effectiveness. Gartner (1970) suggests three factors that contribute to effectiveness: 1) communication of accurate empathy because of shared characteristics; 2) a thorough selection procedure; and 3) a well-executed training program.

There appears to be no research on the use of mental health nonprofessionals (to include 91Gs and 91Fs) in the military, despite our heavy reliance on these personnel. Similarly there is no systematic examination of the role that volunteers play in many installation programs. Nonetheless, a number of programs have been initiated at Army installations with anecdotal reports of a positive impact on the risk of family violence (see Nash, 1983).

Many civilian programs have been evaluated, however, and provide examples of the ways in which nonprofessionals can be employed. These include home visitation programs for educating inexperienced parents (Ayoub and Jacewitz, 1982); parenting education conducted by trained laymen (Gordon, 1971); a "home start" program involving trained volunteers who assist high risk families in problem identification and referral; an education class for teens that teaches marital and parenting skills (Cohen, 1973); and a multitude of less specific "parent aide" programs (e.g., Gifford, Kaplan, and Salus, 1979) including one designed for Air Force families that is intended to reduce the risk of child maltreatment (Posey, 1981).

Most of the programs dealing with spouse abuse revolve around sheltered workshops and crisis teams. A number of programs have been established for abused spouses in military communities (West, Turner, and Dunwoody, 1981). There appears to be no data regarding their general accessibility, methods of providing support or effectiveness. Unfortunately, until such programs demonstrate a positive impact upon the well-being of the military family, they will continue to receive support in a haphazard fashion. West et al. (1981), recognizing the vulnerability of such programs, recommended extensive research on the phenomenon of spouse abuse and the success of various intervention strategies.

These programs, aimed at providing social support as well as practical expertise in matters of family functioning, are suggested to be worthwhile tools for reducing risk of violence and for encouraging timely referral (via the nonprofessional helper) than might be expected in the absence of active outreach efforts. Effective deterrents and interventions at this level free the professional to use his or her skills in a more efficacious manner (Gourash, 1978).

Defining Psychology's Role

Neither Army psychologists nor nonprofessionals are new to programs aimed at the prevention and treatment of domestic violence. However, in order to maintain quality assurance despite austere resources, skills in needs assessment, intervention design, training and program evaluation will become increasingly valuable if the military is to get "the most bang for the bucks." A review of prevention programs prompted Roy Helfer to note that while most programs show promise, there is little systematic research or follow-up (Helfer, 1982). Evaluation of success appears to rest on face validity. Programs employing nonprofessionals have been appealing because of their novelty and positive impact on manpower shortages. Unfortunately, the innate appeal of such programs have led to evaluations based on impressions rather than data (Lorion, 1978).

Similarly, military communities are frequently identified as "stressful" (Miller, 1975) without any identification of the steps that must be taken in order to reduce the stress or buffer the military family against unavoidable stressors. The dilemma for most installation commanders is the absence of any clear definition of family needs, or any guidance on how to assess those needs. One deputy installation commander convened a community work group on needs assessment by noting that he felt as if he was attempting to "shovel fog into a sack." The behavioral scientist may be accustomed to probability and ambiguity, but the ever-accountable commander is not.

There has been considerable research on the military family. A recent OD review and annotated bibliography contains over 1000 pages of material pertaining to the military family (Nash, 1984). While many of the references are anecdotal rather than data based, the review offers a source of pertinent information. The psychologist at the local level can be an asset by performing two functions regarding such information. First, our training in research methodology allows us the background to evaluate and recommend new findings in the fields of domestic violence, program effectiveness and nonprofessional training, for example. By learning from the efforts of others and integrating new research findings, local initiatives in prevention and treatment take on a proactive flavor.

Secondly, the psychologist can adapt previously described methods of needs assessment to the local community with a proper appreciation for the methodological rules and analytical constraints that accompany field studies (Cowan and Esten, 1980). A useful example of this activity might begin with the research scientists of Army psychology critiquing, validating, and disseminating appropriate needs assessment instruments to clinical colleagues who might in turn utilize the instruments, participate in designing intervention strategies, and collect outcome data to assess the immediate and long-term impact of

and unresponsive. Gurr (Gurr, 1970) has suggested that individuals experience frustration from perceived relative deprivation, and that this frustration precipitates aggressive behavior. In any case, the terrorist must make the shift from intellectual ideology to pragmatic violence. For many, of course, this shift never takes place. For others it does.

Psychological role theory provides a framework for understanding terrorism. The theory suggests that individuals act or play out a certain role within a group. While their attraction to the role may have to do with personality variables, it is clear that roles soon obtain a power of their own. Zimbardo's classic prison study clearly demonstrated the powerful influence social roles have on human behavior (Haney, Banks & Zimbardo, 1973). Once in a role, the individual will experience great difficulty in leaving the role. Indeed, when terrorists attempt to leave the role, the result is usually quite terrifying in itself. The Irish Republican Army (IRA) conducts "head jobs" (slashing the throat and almost severing the skull) or "knee jobs" (placing a .45 caliber pistol to the rear of the knee and blowing the knee off, or more recently taking a Black and Decker 1/4 inch drill and boring all the way through the knee) as a means of convincing IRA members not to "backslide".

The impact of roles become more formalized as terrorist organizations become either state supported or state directed. In state directed organizations, for example, leadership positions are assigned by authorities/states. The leader then maintains loyalty not only to the group but also to the state supporting him/her. State supported groups will have more latitude in carrying out operations and in selecting subordinates. The degree of support a leader can locate and control will increase or decrease that leader's power and importance. The logistical strength of the supporting or directing states can significantly increase an otherwise small group's effectiveness. As an example, it now appears certain that the explosives used in the bombing of the Bierut Marine barracks was purchased on the black market in Berne Switzerland by a member of the Iranian diplomatic mission. With that degree of support any small group can become a potent terrorist organization.

The leader in terrorist groups is a cynical yet dedicated person. The leaders are often female, examples being Nancy Ling Perry of the Symbionese Liberation Army (SLA), Ulrike Meinhof of the Baader-Meinhof group, or Fusako Shigenobu of the Japanese Red Army. They show fewer signs of self-interest than any of the other roles in the group. Their personalities are usually rather rigid, dedicated single-mindedly to "their cause", and suspicious to almost paranoid dimensions. They have an all-encompassing belief in the righteousness of their own beliefs and an

the cause of the development of some of the "Red" groups. The Neo-Facist groups employ the same terror tactics as the leftist groups. While these groups typically operate outside the immediate control of state governments (although they may be state supported or directed in a fashion similar to leftist groups), some governments formally use such tactics to control dissent. Such governmental or quasi-governmental activities can be seen in Latin America today. Official government use of terror tactics to quash dissent among it's own population will not be counted as terrorism for the purposes of this paper, although many of the tactics are identical. The Institutes last type, Pathological groups corresponds directly to Hacker's Crazies. Recent events suggest that a seventh type of group is appearing. The Single Interest group has as it's goal the implementation or illimination of a specific policy or procedure. Examples include the bombing of abortion clinics and research facilities. Each of these groups has a different reason for existing. Each may select different targets. Negotiating strategies will differ for each group.

If we look at terrorist organizations, we find that there are several consistent organizational models. Terrorist organizations differ along at least two dimensions, locus of support and organizational format. It is clear that while terrorist groups may have initially started out as independent, that many are now state-supported or even state-directed. State-supported groups receive support (money, weapons, and training) from states but are relatively free to chose their own targets and missions. State-directed groups are given missions and assignments by their directing state. Terrorist groups also differ in their organizational format. Some are rather small, and work in isolation from other cells in the same larger organization. Other formats include a formal paramilitary organization. The PLO and the IRA are examples of this paramilitary format. The PLO, for example, considers their personnel to be on "active duty" and cuts formal military orders (complete with order number) when they make a PCS move. Within each organization, regardless of format or locus of support, there is typically a strong leader who is reponsible for the organization and design of the group, operator(s) who provide the muscle and "hard" skills necessary to conduct each operation, and a larger number of idealist functionaries to conduct the day to day activities (viz. renting a safe house, shopping, delivering messages, etc.).

The factors that motivate a person to join the ranks of a terrorist organization differ. Some join because of a need for power and/ or recognition, and others are overwhelmed by a society they see as unfair

different from negotiating with the Crazy.

TERRORIST GROUPS

The Institute for the Study of Conflict (see FC 100-37, appendix D) has examined terrorist activities and suggests that there are 6 distinguishable types of terrorist groups. These types differ according to the cause they support. Minority Nationalist groups, such as the Basque Seraratist (ETA) found in Spain, the Irish Republican Army in Northern Ireland, and the Black Liberation Army in the United States are groups fighting the majority in their community. Their support base depends on the sympathy of ethnic, religious or linguistic minorities both in their own country and abroad. Thus the IRA had great success not only in Ireland, but also in the United States when they claimed that they were an oppressed minority fighting for their natural rights. Unfortunately, captured documents clearly reveal that this is a promotional strategy. By this point the IRA is heavily funded, trained and equiped via the international terrorist community. Their stated goal is now to disrupt and replace Ireland and Great Britain with a communist state. Although most of these minority nationalist groups operate independently, there is growing evidence that such groups are being supported not only by other terrorist organizations, but also by foreign governments hostile to the government being challanged by the nationalist group. Marxist Revolutionary groups have a rather coherent, often publically aknowledged Marxist ideology (regardless of persuasion) and have a long term goal of bringing about a Marxist revolution. The provisional wing of the IRA and Italian Red Brigade are excellent examples. Anarchist groups such as the Moviemiento Iderio Liberatario (MIL) of Spain and the Red Army Faction in Germany comprise Hacker's third type. Although these groups often turn toward the left for support, their rhetoric and writting call for the overthrow of all forms of government. Ideological Mercenaries, on the other hand, have no particular political leanings. They are simply for hire to commit terrorist acts for any terrorist group that needs assistance. Because they have no special committment to any particular political goal, political solutions will not impress them. Because they are for hire they are highly professional and extremely dangerous. The Rengo Sekigun (Japanese Red Army) and Carlos "the Jackal" (in real life Illich Ramirez Sanchez) are example of this group. Neo-Facist or Black terrorists groups usually represent extremely conservative political views that may have developed to counter the "Red" terrorist groups or have been

In order to understand terrorism we must not only understand what terrorism is, but also who commits acts of terrorism. A great deal of caution must be observed in both the creation and the use of terrorist typologies. Such typologies are misleading if they are used as anything more than a general model. The application of any typology in specific situations is generally not warranted.

PERSONNEL

Although the word terrorist conjurs up images of a uneducated and impoverished individual, the reality is quite different. Most terrorists are young (average age is in the 22 - 25 year old range), college educated, and come from middle to upper income families (Russell & Miller, 1977). This is especially true for the terrorist leaders and the intellectual cadre (individuals such as Dr. George Habbash, Giangiacomo Feltrinelli and Henri Curiel). They were typically recruited during their days as University students and may have started out as disaffected liberal thinkers with only the grandest of motivations. Today they are often professionally trained in formal training programs located in Libya, South Yemen, North Korea, Cuba, and the Soviet Union.

Understanding the motivation of the terrorist is difficult, as there are any number of different motives. According to Hacker (Hacker, 1977) the most common terrorist is a Crusader, an individual who engages in terrorist activities in support of a cause (political, religious or ideological). Hacker's second type, the Criminal, is an individual who engages in terrorist activities for personal gain. A prominent example of this type of terrorist was illustrated in the 1973 hostage barricade situation involving Jan-Eric Ollson's attempt to rob the Sveriges Kreditbank in Stockholm, Sweden. It is often difficult to identify whether or not a specific terrorist incident involves crusaders or criminals. First, the crusader may engage in criminal activity to obtain funds for continued operation. Second, a crusader/leader will often recruit a criminal (often an ex-convict with good "hard" skills) to act as the muscle for the group. Hacker's last type, the Crazy, includes those who terrorize because of their own psychopathology. Prime examples of these types include Son of Sam, Charles Manson, the Hillside Strangler, and by all accounts Idi Amin of Uganda. While these three terrorist types are very broad, they clearly suggest that the strategies for intervening and/or negotiating with each should be significantly different. Negotiating with the Crusader is likely to be very

common victims of terrorism are either members of the diplomatic missions (54 %) or military/corporate targets (31 %). Of the 224 recorded attacks against US citizens in 1982, almost 50% were bombings that took place in Europe. The US military forces are not only a visible symbol of American interests and power, but their presence throughout the world makes them convenient targets. In the period from 1968 thru 1982 there were 557 attacks by international terrorists that involved either US military personnel or facilities. The prognosis for the future is that these attacks will increase (FC 100-37). The government commission which reviewed and investigated the 23 October bombing of the Marine Battalion Landing Team (BLT) at the Beirut Airport assessed the current situation as follows:

The Commission believes that terrorism as a military threat to the US military forces is becoming increasingly serious. As a super power with world wide interests the United States is the most attractive target, and indeed statistics confirm this observation (DOD, 1983).

While it is difficult to determine the success of any given terrorist act, some figures are available. According to a recent RAND Corp study (CIA, 1976), the terrorist who attempts to take hostages has a 87 % success rate, 79 % of all terrorists escape capture, and in 40 % of the cases either all or some of the demands were met. If safe passage out of the country was the only demand it was met 83 % of the time. All demands were met in 29 % of the cases and escape (if demands were not met) was successful in 67 % of the cases. In all (100 %) of the cases major publicity resulted, thus virtually guaranteeing a successful operation in the mind of the terrorist. Media coverage has several other undesirable consequences. First, it encourages terrorists to strike again. Second, and perhaps more dangerous, it creates an atmosphere in which each terrorist may attempt to better the death toll or gruesomeness of a previous act in an attempt to garner more publicity. The Shiite Moslem Jihad was successful in killing 241 Americans in Beirut. What comes next? Now, to kill only 2 in a bombing may appear trivial. Third, it suggests to others that acts of violence are valid means of problem solving. The FBI has recently reported (Arizona Daily Star, 1984) that there have been 20 bombings of abortion facilities in 1984, presumably conducted by anti-abortion activists (terrorists). Animal rights groups have vandalized research facilities and threatened to poison foods in grocery stores if their views on animal rights are not honored.

war in 1972. Military authorities began a policy of "energetic and professional interrogation of prisoners" and assumed virtually all governmental duties and authority. Traditional political parties and the exercise of political rights were suspended for the next 15 years. Despite the institution of a repressive dictatorship, the routing of the Tupamaros, and the death of Raul Sendic, most left (or Red) terrorist groups consider the Tupamaros to have been highly successful. Tupamaros who escaped from Uruguay are revered and honored in the terrorist community. In the mind of the Tupamaro the operation was highly successful. A free democratic government was destroyed and the stage was set for the population to become increasingly unhappy with the more repressive dictatorship that replaced it. The expectation was that sooner or latter the people would (perhaps with some assistance) enter a revolutionary period and institute a communist government. This assumption proved false, for in December of 1984 Julio Maria Sanguinetti was elected President of Uruguay in a free democratic election. The military leaders have stepped down (and did so in less than the 15 years the law allowed them). Democracy has returned. One has to be cynical and wonder when terrorism will return.

In a sense, terrorism can be conceptualized as the ultimate in tragic theater. As choreographed by the terrorist, the play involves the protagonist hero (the terrorist), who, with the help of the supporting cast (the victims), place the government in the role of antagonist (villain). Out of frustration, the antagonist engages in increasingly repressive and offensive behaviors until the audience (the general public) rejects the villain and sides with the hero. The play has a Director (the terrorist organization), and in many cases an Executive Producer in the form of state support or state direction. Like all actors, terrorist hope for good reviews from the theater critic (the media). An active media insures that the message is spread to a world wide audience (an audience that includes other terrorist groups). Like all actors, the impact and importance of the media is crucial. A terrorist incident, like a play, will lose virtually all of it's power and importance if it does not receive media attention.

While this is not a paper on the statistics of terrorism, there are several key statistics that must be understood in order to put terrorism into perspective. Between 1973 and 1982, that State Department reports (US State Department, 1983) a total of 11,132 casualties, including 3,509 individuals killed in various terrorist incidents. The most common terrorist act was bombing, a tactic that accounted for over 43 % of all terrorist attacks. Assassination, kidnapping, hijacking, and hostage situations accounted for an additional 15 % of the incidents. The most

1972 Japanese Red Army bombing of the the Lod airport passenger terminal. It is crucial to remember that, in the eyes of the terrorist there is no innocent bystander. George Habbash, a key figure in the internationalization of terrorism, put it this way; "No frontier, be it political, geographic, or moral, can resist the action of the people. Nobody is innocent, nobody can be neutral in the world of today" (Demaris, 1978). Fifth, the terrorist act is conducted specifically because of the effect that the act has not on the victims but rather upon those observing the situation. Unlike a military mission, where the goal is the actual destruction of a specific bridge because of it's military importance, the terrorist bombing of that same bridge is designed to demonstrate to the population that the government is not able to protect them. For the terrorist, *any* bridge can be a target. The power of the terrorist is that he/she can frustrate the authorities until their response becomes inappropriate. The terrorist hopes that this act will lead the portion of the population that is uncommitted to the terrorists cause to shift their alligience from the government to the terrorist group.

While the terrorist hopes that this shift in alligience will occur rapidly, most are prepared to wait, perhaps for many years. The Tupamaros are an excellent example of this process. By the late 1950s and very early 1960s Uruguay had become one of the most democratic countries of the region. Over 90% of the population was literate. Uruguay had the best health care and the lowest infant mortality rate in Latin America. An extensive social insurance system was in effect and most workers belonged to trade unions. During this period Raul Sendic began trying to reform the trade unions to support a socialist/communist government. Having little success in this endeavor, Sendic formed the Movimiento de Liberacion Nacional (MLN) in 1963. The group became known as the Tupamaros, named after an Inca prince (Tupac Amaru) famous for fighting Spanish rule. From 1963 until 1969 the Tupamaros engaged primarily in "Robin Hood" acts such as robbing a bank and giving the money to the poor. When this tactic failed, Sendic declared war, stating "We now have three hundred kilomenters of streets and avenues at our desposal to organize guerrilla warfare." (Sterling, 1981). In the next several years the Tupamaros engaged in over 300 bloody bombings, killings, and assaults. They killed Dan Mitrione, the US asvisor to the national police force, kidnapped a Brazilian diplomat, an American cultural advisor and even the British Ambassador Sir Geoffrey Jackson, holding him for over 8 months. Despite massive public demonstrations against terrorism, the Tupamaros continued. The government responded by suspending all civil rights in the summer of 1970. This was followed by a declaration of a state of internal

BACKGROUND

In order to understand terrorism and terrorists we must understand what the word terrorism means. First, terrorism is an act of violence (whether actually carried out or simply a threat). Someone is not a terrorist simply because they disagree with a certain policy, no matter how vocal they are with their criticism. Many agree that Northern Ireland should be given political independence, but few actively participate in the killings and bombings perpetuated by the Irish Republican Army (provisional). Terrorism must involve the use of violence (or threat of violence) to obtain one's end. Second, the terrorist sees the terrorist act as an attempt to communicate with people who they perceive as unresponsive to other more conventional means of communication. Thus a member of the Japanese Red Army says the following; "There is no other way for us. Violent actions such as those we have used constantly in fighting the enemy, are shocking. We want them to shock people, everywhere....it is our only way of communicating with the people." (Schreiber, 1978). Third, terrorism is aimed at obtaining a political, religious, or ideological goal. Specific goals might be to publicize a cause, cause a change in a particular policy, demonstrate the ineptness of the government, demoralize the security forces, cause the government to overreact, intimidate a particular group, or obtain money for future operations. While the terrorist act is criminal in nature, the normal criminal goals (ie. of obtaining money for personal gain) are not typically present in acts of terrorism. Exceptions are, however, easily found. The SLA robbed banks in California to fund it's activities, and the Tupamaros in Uruguay conducted "Robin Hood" robberies and gave the money to the poor. Fourth, the terrorist targets an innocent individual or group of individuals. This strategy lies at the heart of terrorism. The people killed and injured by the terrorists generally have little to do with the sought after goal. It is precisely this innocence that gives the terrorist most of his/her power. A dramatic example of this is found in the Christmas bombing of a passenger train in Northern Italy. The train was filled with vacationers and had no political meaning other than to induce terror in to the general population. Following the bombing numerous Red and Black terrorist groups claimed responsibility. The feeling in a general population that it's members can and will be killed and injured at random creates grave difficulties for the government. Again, there are notable exceptions to this tactic of targeting the innocent. When the IRA bombed the hotel where Prime Minister Thatcher and other officials were meeting, they were not bombing "innocent" targets in the same sense as the 30 May,

INTRODUCTION

Terrorism has become an unfortunate fact of life in today's world. While terrorism is becoming a high technology mode of warfare, it is not a new historical phenomenon. The very word "terrorist" has its historical roots in the French Reign of Terror (1793-1794), a period during which Robespierre and the Committee on Public Safety caused the execution of 40,000 and the imprisonment of over 300,000 people. What is new is the terrorist's active use of the mass media to project their message of violence and destruction to the farthest corners of the world. In recent weeks the world watched as 5 Arab terrorists (the evidence would suggest that they are members of a Shiite Moslem group supported by the Ayatollah Ruhollah Khomeini) hijacked a Kuwaiti airliner and held many innocent passengers hostage, using them as pawns in their attempt to force the Kuwaiti government to release 17 terrorists jailed for their part in the bombings of the US and the French embassies. The Kuwaiti government refused to give in under the pressure, a necessary refusal, but one which cost several American hostages their lives. The situation was reminiscent of "Carlos the Jackal's" (Illich Ramirez Sanchez) threat to the French government that he would bomb a cinema (this following the bombing of Le Drugstore on the Left Bank in Paris) if captured Japanese Red Army terrorist Furuya Yukata was not released. After some hesitation, the French freed Yukata, paid him about \$300,000.00 and allowed him to fly to Damascus.

Despite the differences between these two illustrations, there are many important similarities. First, and perhaps foremost, both incidents demonstrate the tremendous power a small group of dedicated, and often professional, terrorists can not only have on the lives of "innocent" people, but also on the operation of governments. Terrorism is a tactic used by the weak to combat the strong. It is a tactic that allows a few men and women (for terrorism is clearly an equal opportunity employer) to challenge and often control an army or government. Many terrorist groups use military names and titles specifically to enhance this psychological effect. The Japanese Red Army, the Angry Brigade (England), the Red Army Faction (Germany), the Red Brigade (Italy) and the Symbionese Liberation Army (US) are but a few examples. To the viewer, and terrorism is always played to an audience, these names suggest organizations of great power and personnel. In reality such groups usually have a membership of less than 50.

PSYCHOLOGICAL ASPECTS OF TERRORISM:
TERRORIST GROUPS AND PERSONNEL

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Abstract

Terrorism has become an unfortunate fact of life in today's world. Recent incidents against US targets/citizens have included the attack on the Marine barracks in October of 1983 which killed 241 people, and the hijacking of the Kuwaiti airliner and subsequent killing of 2 US officials in Tehran. Terrorism is defined as an act or threat of violence aimed at "innocent" individuals, in the hope of precipitating an inappropriate response from the authorities. Current statistics on the incidence and targets of terrorists are summarized. Terrorists can be divided into 3 major categories, Crusaders, Criminals, and Crazies. Terrorist groups include minority nationalist groups, marxist revolutionary groups, anarchist groups, ideological mercenaries, Neo-facist groups and pathological groups. Psychological role theory allows for the identification of three main roles within terrorist group; the leader, the operator, and the idealist. Implications for hostage negotiation strategies are introduced.

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We already have too few professionals doing too many things. We do not wish to become referral agents and volunteer coordinators. We would lose our identification as AMEDD health care providers and become DPCA staff officers. There are no manpower credits for prevention and training; and worse, without proponency, we would probably receive no formal recognition of our efforts.

Given our limited resources, any bold promises of new solutions by psychology are ill-advised unless there is a clearly defined DA mandate for our involvement in roles appropriate to our discipline. However, as local health care providers we should exercise our skills in new arenas. Our field was among the first to employ the concept of "wellness" in the face of disease models of health care. Family advocacy offers us an opportunity to put that concept to work.

the interventions (Alvey, 1975).

Psychology can also perform other tasks that are more directly involved in the effective utilization of nonprofessionals. For example, Shag, Loo and Leven (1981) described an instrument for assessing behavioral response modes among potential nonprofessional counselors that reliably identifies interpersonal traits considered desirable for effective counseling. The need for such assessment is supported by the general consensus of mental health service delivery studies wherein interpersonal traits such as accurate empathy and unconditional positive regard are identified as the most conspicuous correlates of nonprofessional effectiveness (Gartner, 1979).

Some additional observations deserve comment here. Several programs are already underway that could use the specific services of psychology. The Army Foster Care Program (AR 608-1, Chapter 9) is an important adjunct to the prevention and treatment of child abuse. An extensive evaluation process is articulated in the regulations for acceptance into the program, yet there is no mandate for any psychological evaluation. For that matter, there is no requirement that a psychiatric evaluation be included in the review of medical records. Moreover, neither Child Development Center employees nor Family Child Care providers are required or even suggested to be evaluated psychologically prior to certification (Child Development Services, AR 608-10). Finally, there is all too often no systematic procedure for screening the potential volunteers who perform services as home visitors, crisis hot-line operators, and activity coordinators. While their efforts are, quite frankly, the backbone of a healthy military community, there remains the need for increased attention to evaluating their suitability for the sizable tasks they frequently take on.

Of course the most time-consuming activity regarding nonprofessional involvement in secondary prevention is training and supervision. If relevant field experience is the most salient feature of a competent trainer and supervisor of nonprofessionals (McPheeters, 1979), then the social work officer remains the best choice for this role with respect to family violence and advocacy. Psychologists can nonetheless make a significant contribution to this activity. First, we remain clinicians by training and as such are well qualified to pass our skills on to others. Second, we, like our other mental health colleagues, have unique ways of viewing problems. The previous presentation on primary prevention offered an example of our conceptual flexibility. Finally, we can provide considerable expertise in issues concerning developmental dysfunctions and crises that frequently contribute to domestic conflict; evaluating high risk families (Starr, 1978); and consulting with commanders. Expanding our contribution to training and supervision requires an increasing commitment to the nuts-and-bolts business of dealing with family violence. What must be avoided if we are to remain relevant in the Army's family advocacy efforts is a reluctance to expand beyond traditional roles; or worse, a wholesale negation of our role by describing the Army's efforts as "nonpsychology business."

Comment

Many papers written about non-traditional roles are criticised as idealistic. Certainly there are practical problems that must be considered.

absolute conviction that all who oppose them are evil. With this mindset all options become acceptable and responsibility is easily displaced onto the target. Consider the following statement made in 1970 by Leila Khaled, an Arab terrorist who played a key role in the September 1970 hijacking of the El Al airliner, "If we throw bombs, it is not our responsibility. You may care for the death of a child, but the whole world ignored the death of Palestinian children for 22 years. We are not responsible" (Schreiber, 1978). The intensity of the leader's beliefs appears to those of us on the outside as irrational, yet there is no evidence that these individuals possess any significant psychopathology. The structure of their beliefs is built around "grains" of truth and any explanations that contradicts these cherished beliefs are suspect. Although the leader may now be involved in criminal activity (ie. bombing an Embassy) these criminal activities are likely to have been preceded by radical political activities. The leader's commitment to radical political ideologies occurs first. The translation of these beliefs into violent actions occurs later. In order to run a terrorist organization a leader is necessary, but of course not sufficient. The group must have a number of individuals with the necessary skills in tasks such as surveillance, bomb construction, weapons maintenance, etc. if the group is to conduct its business. It is the leader's job to recruit these individuals. Thus the leader must have good interpersonal skills. She must use her followers in a comfortable way that encourages them to lay down their lives for her cause.

Each group must have individuals to conduct its operations. Although the leader plans the operation, the actual execution is often left to the operator. The leader watches from the sidelines in relative safety. This was clearly the case in the Lod airport shooting. These individuals must have the necessary hard skills to translate rhetoric and threat into reality. In the early terrorist organizations these individuals were criminals of one kind or another. More often than not they were recruited while they were in prison, often by being told that their criminal behavior was not their responsibility, but rather the result of an unfair and unjust society. Unlike the leader, the Operator typically has a criminal history that pre-dates their involvement in terrorist or political activity. In formal diagnostic categories these individuals are typically sociopaths. They are true soldiers for the cause. But, unlike soldiers, they have little anxiety and are unencumbered by feelings of guilt or empathy. They kill, torture, and injure with impunity, much as they robbed and raped during their criminal days. For these reasons they are extremely dangerous. While the leader will kill for the cause, the operator may kill just to kill. During the Moluccan train hijacking one of the operators repeatedly suggested that they execute more

hostages. This despite repeated confrontations with other terrorists that this was unnecessary. The leader skillfully manipulates the operators to feel appreciated, important and powerful. Some, like SLA member Donald David DeFreeze are given important sounding titles (DeFreeze was General Field Marshal Cinque). Operators are generally less intelligent than the leader, as the more intelligent operator is a threat to the leader. He is taught to believe that his difficulties are the result of mistreatment by the authorities or society or society in general. He, and most operators are males, is aggressive and rather concrete in his thinking. Andreas Baader and Hans Joachim Klein of the Baader-Meinhof group and Akira Nishihara of the Japanese Red Army are other examples of this group. It is crucial for the negotiator to understand if they are dealing with the leader or the operator. If they are dealing with the operator, it is crucial to know if the leader is present.

The third common role, is that of the idealist. The idealist is generally rather intelligent, although politically naive. They are initially rather normal looking individuals who are searching for a "cause" that will make the world perfect. They are easily convinced that the system is bad and that a new world order is needed. Because they have some difficulty with delay of gratification, they experience significant frustration when their dreams are not met. They are dedicated to the leader's rhetoric and stand in awe of the operator's power and skill. They are the cannon fodder of the revolution. They locate safe houses, reconnoiter buildings, and often provide money to support the group. When needed they will die to support the cause. In a sense, the terrorist group gives these individuals a reason for living. They can commit themselves to a cause that on the surface has high ideals and promises a perfect world. In addition, they can operate in an environment that condones their rebellion and makes their life interesting and exciting. Unlike the leader who must be protected, and broken out of jail if captured, and unlike the operator who has crucial skills that the groups must have in order to function, the idealist is truly expendable.

As mentioned earlier, each terrorist organization must have individuals who fulfill each of the roles described above. It is clear that beginning in the late 1960s, a concentrated attempt was made by several individuals to internationalize terrorism. Up to that point most terrorist activity was fiercely nationalistic in origin and design. It is now clear that, while some terrorist groups maintain a strong independence, that most are interconnected in one way or another. One way in which the groups are interconnected is that they routinely provide logistical and personnel support for each other. Thus in a complicated terrorist operation it is not

unusual to find the weapons brought into the target country by one terrorist group, a second group to provide the safe house and security, and a third group (with perhaps multi-group membership) to actually conduct the operation

SUMMARY

Terrorism is becoming an increasingly common tactic. Using this tactic the weak can confront the strong, and governments can be stalled and even overthrown. While terrorist in the past have operated in small groups and survived on the ideological or religious fervor of their cause, they are now professionally trained to kill with precision and skill. They often operate in an international network with state support and at times state direction. While we prepare for global war, terrorism is inflicting casualties every day. As Von Clausewitz said, war is a continuation of politics using other means. Using that definition, we are at war today.

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The Psychological Aspects of Terrorism

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Abstract

Acts of terrorism have been increasing over the past two decades, and governments have learned effective means of combating the effects of terrorism. Governmental agencies have heavily utilized the expertise of psychologists, psychiatrists, and social workers in developing intervention strategies for terroristic activity. Utilization of such professionals occurs at a variety of levels, such as in: 1) assisting responsible officials in understanding the psychological make-up of terrorists; 2) preparing high risk populations for the physical and psychological trauma of captivity; 3) serving as psychological consultants during hostage negotiations; 4) providing therapy for the hostages after their release, and, 5) providing therapy for family members both during and after the captivity period.

Effective intervention as a professional psychologist requires a very specific orientation in understanding the nature of terrorism and the psychological effects of prolonged captivity. This presentation will attempt to consolidate knowledge from the domains of terrorism and the science of psychology into a guideline of intervention for the Army psychologist.

PROFILE OF TERRORISTS AND THE TRENDS OF TERRORISM

A. OBJECTIVES

1. State the probability of success for terroristic activities.
2. Provide a demographic profile of a terrorist.
3. Identify geographic operational preferences for terroristic activity.
4. Identify likely personnel targets of terrorists.
5. Identify two reasons for increasing lethality of terroristic activity.

B. PROFILE

(Taken from Russell and Bowman, Profile of a Terrorist, Military Review, August, 1977, p 21-34)

1. Without knowledge as to the type of individual engaged in urban terrorism and those factors motivating his actions, coping with the problems of both national and transnational terrorism will become increasingly difficult. Based upon a compilation and analysis of published data regarding more than 350 terrorist cadre and leaders from Palestinian, Japanese, German, Irish, Italian, Turkish, Spanish, Iranian, Argentine, Brazilian, and Uruguayan groups active from 1966-1976, an attempt has been made to draw a sociological portrait or profile of the modern urban terrorist.

AGE

In the 18 groups studied, the age for active terrorists cadre versus leadership was remarkably consistent from group to group. Except for individuals affiliated with Palestinian, German, and Japanese organizations, the usual urban terrorist was between 22 and 25.

Only in the above mentioned groups was there an upward trend in the cadre age. In Japan, based upon the arrested members of the Japanese Red Army, average age was approximately 28. For those affiliated with the Popular Front for the Liberation of Palestine and the Black September Organization, data on identified and arrested terrorists indicate that most were in their late 20s. In the case of the Bader-Meinhof organization and the Berlin-based Movement Two June, data on more than one hundred members reflected an average age of 31.3.

SEX

Despite minor variations among some of the groups studied, urban terrorism remains a predominantly male phenomenon. With few exceptions, the role of women was confined to intelligence collection, operations as

couriers, duties as nurses and medical personnel, and in the maintenance of "safe houses" for terrorists sought by the police and for storage of weapons, propaganda, false documentation, funds and other supplies.

There have been numerous well known exceptions to this generalization. Thus, Leila Khalid and Fusako Shigenobu were highly effective leaders in the Popular Front for the Liberation of Palestine and the Japanese Red Army. While these and many other women have carried out key leadership roles or operational roles in varied terrorist groups, most women terrorists continue to function in a supportive capacity. Significantly, this frequent relegation of women to a support role is not the product of male chauvinism, but, rather, practical experience. In the minds of most terrorist leaders, and as demonstrated by actual operations, women are simply more effective than men in such supporting activities. Several women living together (yet actually operating a "safe house", weapons storage cache, or document fabrication facility) are infrequently seen by security personnel as something unusual, whereas a gathering of men in a apartment or house might well be viewed with substantial suspicion. Similarly, in the terrorist view, women--by virtue of their sex alone--are more adept at allaying the suspicions of security personnel. As a result, rising as wives or mothers, they often can enter areas which would be restricted to men, thereby obtaining useful intelligence information on government or business operations and activities.

Although women have functioned in a secondary role in most terrorist groups, they have occupied a very important position in the West German Baader-Meinhof organization as well as the Movement Two June. There women constitute fully one third of the operational personnel. In the West German context, there appears to be no real terrorist division of labor based on sex. Many women have been identified in leadership roles and as participants in robberies, burglaries, kidnappings, bombings, and other operations, including murder.

MARITAL STATUS

The unmarried terrorist is still the rule rather than the exception. Requirements for mobility, flexibility, initiative, security and total dedication to the revolutionary cause all preclude encumbering family responsibilities and normally dictate single status for virtually all operational terrorist cadre. Some of the few married individuals involved in German terrorist activities severed ties to spouses and children in order to pursue terrorist methods.

Only in the Tupamaros were a significant number (still less than 30%) of the terrorists cadre in a married status. Of interest in this regard to this group is the fact that the married status of many Tupamaros posed some significant problems for that group. In those instances where the wives of

Tupamaros were arrested and subjected to interrogation, morale consideration almost compelled the group to seek their release. As a result, in operations such as the 8 March 1970 attack on the women's prison in Montevideo, where the effort secured the release of 13 women Tupamaros and was a propaganda and morale victory for the organization, the cost was high in casualties suffered by the attack team. Thus, the decision of most terrorist organizations to use unmarried or separated personnel appears sound from an operational point of view.

RURAL versus URBAN ORIGIN

As pointed out by Carlos Marighela, probably the most widely read, known and imitated theoretician and practitioner of urban guerrilla warfare, the terrorist must be intimately familiar with the terrain in which he operates.

What matters is to know every path a guerrilla can use, every place he can hide, leaving the enemy at the mercy of his own ignorance. With his detailed knowledge of the streets, and all their nooks and crannies, of the rougher ground, the sewers, the wooded ground...urban guerrillas can easily elude the police, or surprise them in a trap or ambush. If he knows the ground well...he can always escape arrest.

In view of the above, it is not surprising that most urban terrorists are natives or long time residents of metropolitan areas, particularly the cities in which they operate.

SOCIAL and ECONOMIC BACKGROUND

In conjunction with their urban origin or longtime residence in metropolitan areas is the predominantly middle-class or even upper-class background of many terrorist cadre and leaders. Of the groups statistically analyzed, well over two-thirds of these individuals came from the middle or upper classes in their respective nations or areas. In most cases their parents were professional people, governmental employees, diplomats, clergymen, military officers or sometimes even police officials.

Although these parents were part of the existing social and economic systems, many of them had been frustrated in their efforts to use them as vehicles for upward social and economic mobility. Liberal in political outlook, they frequently advocated significant social and political change. When these parental views were coupled with the radical socioeconomic doctrines so popular in most university circles in the 1960s, this combination of forces--in addition to general student distrust of "democratic institutions" as effective media for implementing social change--may have moved some young people toward terrorism and guerrilla warfare as methods of achieving the desired change or obtaining the power to implement such changes.

Only in the ranks of the Provisional Wing of the Irish Republican Army is there a real deviation from this norm. To a significant degree, this may result from the fact that Catholic families in Northern Ireland traditionally have been relegated, by political means, to the lower economic and social levels through a process of deliberate discrimination. Accordingly, it is not surprising to find that many cadre and leadership within the IRA-P are not drawn from the middle and upper classes. This situation, however, stands out as almost the sole exception to an otherwise general and consistent pattern.

EDUCATION or OCCUPATION

The vast majority of those individuals involved in terroristic activities as cadre or leaders are quite well-educated. In fact, approximately two-thirds of those identified terrorists are persons with some university training, university graduates, or postgraduate students. Among the Latin American terrorist groups, the figure is near 75%. In the Federal Republic of Germany, the same pattern was evident with approximately 80% of the identified terrorists involved in the Baader-Meinhof organization and Movement Two June having received at least some college education.

For the Palestinian groups, most leading terrorist cadre are not only products of a middle class environment but also university students or graduates.

Coupled with the generally high educational level of operational cadre was an equally high level for group leaders. George Habbash, chief of the very active PFLP, is a medical doctor. His counterpart and frequent rival, Yasir Arafat, is a graduate engineer. Other professions represented include sociologists, economists, lawyers, and teachers.

Although spanning a rather wide educational spectrum, the formal training of both terrorist leaders and cadre, in most groups, tended to focus on the humanities, with particular emphasis on law, history, economics, education, sociology, philosophy and medicine. In contrast to this general arts and sciences curriculum, Iranian and Turkish terrorists tended to be educated in the more exact sciences, particularly the technical fields such as engineering. As a general exception to the entire educational pattern, however, is the Provisional Wing of the Irish Republican Army, essentially for the same reasons set forth in the earlier discussion of social origin. The Provisional IRA, and the extremist Protestant groups which arose in reaction to it, are the only terrorist organizations in the world which even in their leadership have practically no intellectuals.

The dominant occupation among these individuals is now and always has been that of a student. Often in their early 20s, Tupamaros, Montoneros, ERP members, and the various followers of Brazilian revolutionary Carlos

Marighela frequently have conducted terrorist operations almost as a direct part of their college curricula. Operating from university centers, which by law and tradition were immune from government search, more than 70% of the arrested identified terrorists in Argentina and Uruguay were students. When older individuals also were active in these groups, they usually were white collar workers and professionals. Outside of Latin America the percentage of student terrorists was somewhat less, although this occupation remained important. Of the professionals, the law, economics, and medicine professions were particularly prevalent among European and Middle Eastern terrorist leaders and cadre. In a like manner to Latin America, universities in West Berlin, Frankfurt, Heidelberg, and Hamburg in Germany and elsewhere in Europe have served as operational bases for terrorist efforts.

METHOD-PLACE of RECRUITMENT

Considering the important role played by students and university graduates (or dropouts) in most terrorist movements, it is not surprising that many large universities have been and are now primary recruiting grounds for operational terrorist cadre. Quite often young men and women first encounter anarchistic and Marxist doctrines on entrance into a university where the prevalence of such concepts is often coupled with a strong Marxist bias on the part of the professors and administrators. When these developments are linked with frequent Marxist domination of student federations, it is not surprising that the university becomes an ideological training ground for future terrorist cadre.

Only in Northern Ireland and to some extent in the Basque ETA-V, as well as among certain Palestinian groups, is the pattern broken. In each of these cases, however, terrorist recruitment often is based on the primary appeal of nationalism rather than on an anarchistic and Marxist political philosophy.

For those few terrorist groups which include both intellectual and criminal elements, the initial recruitment for the latter is often a prison. A terrorist group would make an initial contact with a potential terrorist while he is still serving a prison sentence. Facilitating the release of such an individual or providing assistance to him after release, the terrorist group is able to assess his potential for terrorist activity. If useful to the organization, such a person can be recruited without much difficulty.

POLITICAL PHILOSOPHY

Using the basic definition of terrorism as a tactic used by weak groups against larger opposing forces in pursuit of political objectives, one can discard terrorism as meeting the criteria of a philosophy itself. Three basic ideological tendencies are at play among most major terrorist groups

operating today: anarchism, Marxism-Leninism, and nationalism. It is the combination of these three in specific contexts which produce the variant left-extremist philosophies espoused by most terrorists today.

Nationalism is rarely an important ingredient in such views. Of the 18 organizations studied, it can only be considered important in the case of three: the Basque ETA-V, the Irish Republican Army, and the Popular Front for the Liberation of Palestine. Even in these groups, however, it is blended strongly with Marxism.

Although basically Marxist, the majority of terrorist organizations today reject the passive outlook of orthodox Soviet communism in favor of the revolutionary violence advocated by Carlos Marighela. In return, the orthodox Communists normally reject terrorists as "bourgeois gangsters" who lack a political foundation and have abandoned the tested social and political Communist Party structure in favor of short sighted and often counterproductive "hooliganism."

Accordingly, it should be no surprise that the terrorists discussed in this profile related more closely with the Trotskyite Fourth International than Soviet communism.

Trotsky's theory of 'permanent revolution' emphasizes in its international aspects, the global nature of the phenomenon, the necessary links between revolution in one country with that elsewhere. Ethnic, cultural and national distinctions will on this thesis be unable to withstand the revolutionary tide.

Thus, in the final analysis, the philosophical underpinnings of most modern terrorist groups may be found in a loose synthesis of the views developed by Mao, Trotsky, Marcuse, Fanon, and particularly Marighela.

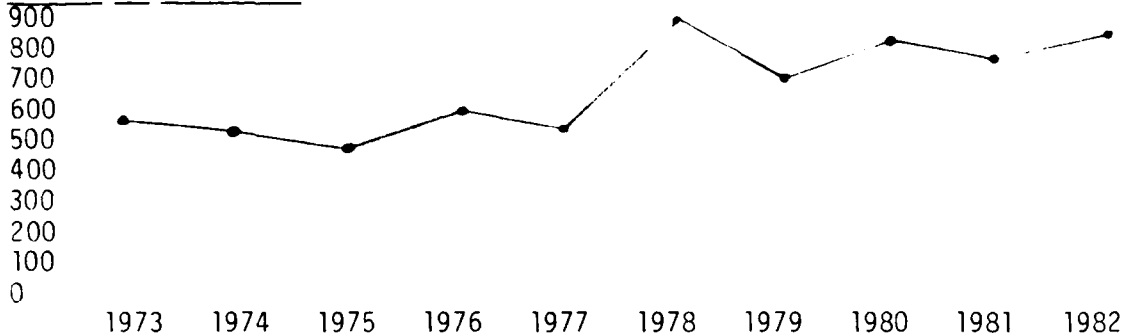
PATTERNS OF INTERNATIONAL TERRORISM

(taken from Patterns of International Terrorism: 1982, United States Department of State, September, 1983)

International terrorism continued as a serious problem in 1982. In particular, the volatile situation in the Middle East, the instability in Central America, and the intensifying opposition to US and NATO policies in Western Europe generated significant terrorist activity.

International Terrorist Incidents, 1973-82

Number of Incidents



In 1982, 794 terrorist incidents were recorded, the second highest annual total since records began to be kept (1968). Nearly one third of the total number were threats that for one reason or another were never put into action. The number of actual recorded terrorist attacks--bombings, kidnappings, assassinations, hostage takings, and the like--was 8 percent lower than the previous year. (The largest number of recorded incidents (838), which occurred in 1978, was disproportionately high because of the violence accompanying the Iranian revolution and the deposal of the Shah.)

Types of Attacks

International terrorists continued to utilize a wide variety of methods to achieve their goals, but bombings were the most common, accounting for 42% of the total number of incidents last year. The number of kidnappings increased over the previous year, while the number of hostage takings, armed attacks, and assassinations declined. Even so, the pattern of killings remained a serious problem. At least 140 people were killed last year as a direct result of international terrorist actions, bringing to more than 3,500 the total number killed since the beginning of 1973.

Types of Victims

Diplomats were the primary target, accounting for 54% of all victims last year. This was largely because of the continuing practice by certain states of sponsoring terrorist attacks against official representatives of adversary countries. Corporate officials--mostly Americans in Latin America--and military personnel accounted for another 31% of the victims.

As in past years US citizens were the primary target of international terrorists. Of the total number of incidents in 1982 involving individuals, nearly half were against US nationals. Other countries whose citizens were often victims included Turkey, Israel, France, Yugoslavia, and West Germany. Less than 2% involved Soviet nationals.

The 954 casualties produced by terrorist incidents during 1982 were slightly fewer than the 1,009 recorded in 1981, and substantially fewer than the 1,709 recorded in 1980. The 140 recorded deaths is the lowest figure for any year since 1973.

Target: USA

While the total number of recorded terrorist attacks worldwide declined from the previous year, anti-US violence increased in 1982. Excluding threats and hoaxes--which were more than double the 1981 figure--actual attacks against Americans numbered roughly as many as the previous high recorded in 1978. Seven Americans were killed in 1982.

Of 224 recorded attacks against US citizens and property, about half were bombings in Western Europe. The number of attacks involving US interests in West Germany alone--primarily US military installations--was nearly twice the figure of the previous year.

Some reasons for the frequency of attacks on US interests:

- 1) Many terrorist groups cite "anti-imperialist" motives in striking at US targets.
- 2) US targets are numerous, varied, and accessible in most of the countries where terrorists are active.
- 3) US policies are usually opposed and often inimical to the goals and interests of many terrorist groups.
- 4) US support of the governments that terrorist groups are trying to destabilize or overthrow automatically puts Americans in the enemy camp.

Regional Patterns

International terrorism has increasingly become a global problem. Figures for 1982 confirm the trend toward a greater geographic spread: in 1973, 71 countries experienced terrorism; in 1982, 87 countries were affected. Notwithstanding this trend, some countries--especially totalitarian states like the Soviet Union, China, and Cuba--have remained relatively free of terrorism. Conversely, in the Western democracies

International terrorism is more widespread. More than one-third of international terrorist incidents recorded in 1982 occurred in four democratic countries: West Germany (15%), Italy (7%), France (7%), and the United States (6%). Not surprisingly, Western Europe accounted for almost 43% of the international terrorist incidents recorded. Latin America followed with 22%, and the Middle East with 15%.

(see here Figures 2, 3, 4, and 6)

EFFECTIVENESS OF TERRORISM

In recalling that terrorism is a tactic of the very weak against the strong, note the following probabilities of success which are based upon 15 years of experience with terrorism.

- 87% of capturing hostages
- 79% that all members will avoid capture
- 40% that some demands will be met
- 30% that all demands will be met
- 83% of safe passage if that is the only demand
- 67% of escape to another country if no original demands are met
- 100% of gaining publicity, if that was one of the original goals

PSYCHOLOGICAL CONSIDERATIONS

Elizabeth Kubler Ross has described 5 stages of emotional digestion which individuals experience as they adjust to the reality of death. These 5 stages are also seen in a variety of other stressful settings in which people must make adjustments. Be aware that captives in a hostage situation are likely to go through these stages during their captivity.

- 1) Denial
- 2) Anger
- 3) Bargaining
- 4) Grieving
- 5) Acceptance

THE PSYCHOLOGICAL AFTERMATH OF DISASTER

(taken from Mayo Seminars in Psychiatry, Journal of Clinical Psychiatry, Vol. 41, no. 7, July, 1980).

It has been estimated, based upon the reactions of individuals caught up in natural disasters, that 12% to 25% of victims during the impact of a disaster will remain "cool and collected", able to maintain their awareness, formulate a plan of action and carry it through. A more "normal" 75% will be

basically, all attitudinal Likert-type items; the remainder, not used in the analysis were "yes-no" type items and demographics). The matrix consisted of Kendall's Tau B coefficients of correlation for all pairwise combinations of these 38 variables. Many of these were found to be statistically significant at or beyond the .05 level, most probably due to sample size. In general, correlations, even significant ones were rather small.

From the correlation matrix, a Principal Components analysis was performed. Using an admittedly arbitrary minimum acceptable factor loading of .50, six factors emerged; of these six, one factor contained 16 heavily loading variables, one factor contained five, one contained three, and the other three factors contained one each. Upon inspection of the data, the six factors were labeled thusly:

- Factor I: General orientation towards deployment
(16 variables).
- Factor II: Orientation towards racial intervention
(three variables).
- Factor III: Subjective probability of future
armed conflict
(five variables).
- Factor IV: Subjective trust of foreigners
(one variable).
- Factor V: Need for personally relevant future
information
(one variable).
- Factor VI: Subjective sense of passage of time
(one variable).

Partly due to major time constraints, as well as because of our inference that further study of the first two factors would bear the most fruit, the remainder of our analysis was confined to that of Factors I & II. Listings of the 16 items heavily loading on Factor I, as well as the three included in Factor I which make up Factor II, are presented in Tables 1 & 2 respectively.

tions, (4) Evaluations of the constabulary role, and (5) Diffusion of information. Only the fourth category, Evaluations of the constabulary role, proved to change significantly over time as well as to differ from the control groups. Generally, the Sinai peacekeepers felt that constabulary work is boring, and that it is not appropriate for Airborne units. Additionally, perceptions that peacekeeping would help a soldier's military career decreased only in the Sinai sample.

These authors noted that "In general, change in the control groups was in a proconstabulary direction, while change in the Sinai unit was more negative", with the implication that severe morale problems could develop that must be dealt with in a preventive way. A specific area of potential intervention was seemingly uncovered by Segal, et al.'s failure to replicate research by others (e.g., Burrelli and Segal, 1982; Cockerham and Cohen, 1979). Data from these two studies suggested that Marines and paratroopers are more positively oriented to combat missions than to social control functions such as quelling riots or restoring law and order to a disaster area. However, Segal, et al.'s (1984) paratroopers "seemed not to differentiate social control from combat". It was reasoned by the present authors that if the item categories were to be derived empirically, conceivably certain unknown factors could be specified which could serve to support previous data as well as help elucidate the relationships among the attitudinal variables.

Method and Results

At the time of the present analysis, the only data available were those obtained from the "first wave", that is, the pre-test scores of the paratroopers prior to their departure for the Sinai. A total of 78 completed questionnaires underwent our analysis. A correlation matrix of all ordinal data was generated (38 of the 49 available items:

Introduction

Although historically, the quality of a military organization may have been judged at least partially by its combat readiness, increasingly the role of the military as peacekeeper (the so-called "constabulary" role) has become of great interest and relevance. Janowitz (1960) defined a constabulary force as one which is "committed to the minimum use of force, and seeks viable international relations, rather than victory". Subsequently Fabian (1971) and Moskos (1975) warned against the use of the major powers and superpowers as peacekeepers. Moskos affirmed that "soldiers from neutral middle powers are more likely to subscribe to the constabulary ethic than soldiers from major powers". However, although the 1979 Camp David Accords specified that peacekeepers were to be drawn "from nations other than those which are permanent members of the United Nations Security Council", a satisfactory multinational agreement could not be reached, and ultimately one battalion from each of the 82nd and 101st Airborne Divisions were assigned the mission.

Segal, Harris, Rothberg and Marlowe (1984) questioned whether there might be "a basic incompatibility" between the peacekeeper ethic and the use of elite airborne units who are especially oriented, compared to most other troops, to combat and action. In a longitudinal study, they compared the attitudes and behaviors of the two Sinai battalions with two non-Sinai assigned control groups: a company remaining at the division garrison (Fort Bragg) and a company deployed for brief jungle warfare training. The survey instrument used was assembled from various sources, e.g., an instrument developed by Brown and Moskos (1976), items used by Blatr and Segal (1978), and Moskos (1975), and others added by research staff. The arbitrarily categorized items measured attitudes in the areas of: (1) Combat orientation, (2) Willingness to deploy, (3) Orientation toward social control func-

A Factor-analytic Study of Deployment Attitudes
of the Sinai Peacekeeping Force

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Abstract

Studying paratroopers' attitudes towards the constabulary mission, such as that of the Sinai Peacekeeping Force, Segal, et al. (1984) found that negative attitudinal changes across time were those related to evaluation of the constabulary role. However, paratroopers "were as willing to deal with domestic disaster areas, riots and revolutionary violence as to deploy for foreign military engagements". The authors inferred from the former findings that the resulting boredom of a constabulary mission may take a greater toll among "elite" troops who are more oriented toward combat situations. Since the general content areas of Segal, et al.'s instrument were not empirically derived but were instead, arbitrarily categorized, it was believed that a factor analysis of the data in that study could help to elucidate the variables impacting on the attitudinal findings. A Principal Components analysis was performed on a correlation matrix of the attitudinal data. Findings suggest that race appears to be an important determinant of attitude towards specific types of deployment; overall, results suggested that motivation and morale depend, to some degree, on the extent to which a soldier can identify with or attach personal meaning to the mission at hand. Further implications are discussed.

4. No press contact

5. Keep in touch; call; visit just to ask, "How are you, what's new? anything that I can do for you? How is the family?" Do not give the message "You are sick and really need my help".

6. The family is the first line of defense, ahead of the professional--therefore, it is important that the family be guided, taught, supported; in short, totally prepared.

4. Create a daily rhythm; exercise; eat at regular times, etc..
5. Start exercises. This is probably the most important channel for relaxation, aggression, physical fitness. Ask the terrorists: "Can we do some exercises?"
6. Keep yourself clean.
7. Affiliation--different from identification. Form a relationship with the aggressor. To a degree this is wise. One ex-hostage accurately reflected a common experience that "in seconds, you are nothing--there is a complete physical ("lie on the ground") and mental ("do not speak") degradation.
8. Play simple games (e.g., cards, dominos, not chess or bridge).
9. Do not make waves. Contain your aggressiveness. "In the cat and mouse game, the cat is not interested in the dead mouse." Bend; be overly passive, show no aggressive behavior. One hostage was asked "Shall I shoot you?", to which he replied, "If it will help the others." This was not a brainwashed answer; it was the best type of reply that has the least chance of stirring up the terrorist's aggression.
10. Do not try to change the terrorist's ideologies around (do not argue or confront). Agree with them "You're right, I never thought of it that way."
11. For the family, as well as for the hostage, keep as normal a routine as possible.
12. Isolation is bad: keeping to oneself to not be noticed is not a good policy.
13. One man (who knew a great deal about theology) said he was a minister and fulfilled his role. A medical student said he was a doctor. A housewife should try to function as such during captivity.

Aftercare:

BE ACTIVE, BUT DON'T BE PUSHY.
HAVE ONE CENTRAL INFORMATION NUMBER.

1. Receive in American surroundings (can be overseas).
2. Receive cosmetic care--hostages have been dehumanized; rectify this.
3. Complete a physical exam and give appropriate treatment.

Former hostages do not need the intrusiveness into their lives that the press brings. Hostages, together with their families, are attempting to work through enormous problems, both individually and together. Ex-hostages and/or family members may say things that were said emotionally, impulsively, and as a result of complex intrapsychic turmoil--things which would have later repercussions. As an example, a man stated to the press as he was being released that his captors (the Moluccans) "were really not such bad young men." To this, his very wise wife said to him, "Keep quiet, you've said enough. Now let's go home".

13. Finally, it is important to respond to victims of terror by continually reassuring them that their behavior during captivity is fully acceptable. As long as they are alive, they did the right thing. They did nothing wrong, and they need to be welcomed back as one would with a loved one who has recovered from a frightening and painful disease.

PROPHYLAXIS

Before:

1. Know what to expect if captured; step-by-step, know what to anticipate, including individual reactions.
2. Spend some time to imagine, based upon known facts, what it is like in such a situation.
3. Anticipate what kind of emotions you will experience, especially anxiety.
4. Avail yourself of stress inoculation programs.
5. Become familiar with group dynamics, so as to better appreciate what occurs within you and between others as a member of a group.
6. Become educated in all aspects of terrorism, i.e., be knowledgeable of such topics as "identifying with the aggressor," etc.
7. Train leaders within groups on what to expect and how to react to terrorist incidents.

During:

1. Meet with families (immunize them against the press).
2. Work with the families.
3. Maintain orientation.

4. To reduce the feelings of being subjected to the dominant behavior of the terrorist, the counselor is encouraged to identify himself to the victim's satisfaction, to ask for permission to to even sit down in the victim's presence, to smoke, etc.

It is important to remember that the sudden release of the victim reproduces an acute phase of crying, clinging, submissive behavior. The victim is still in the grips of traumatic infantilism. The above methods of nurturing and restoring power are crucial in helping the patient recover from this traumatic experience. It is important that the victims be allowed to clean up before being restored to familiar surroundings. Debriefing should be delayed. Victims should have privacy without isolation.

5. After five days keep in regular touch. Appropriate questions would run in the following vein: "Hello, how are you? What's new? Is there anything that I can do for you?" These all show concern and interest but avoid being pushy; do not give the message: "You are sick and really need my help."

6. Be very aware of what Hoppe has called the "master-slave" situation which may develop between the therapist and patient as a continuation of his relationship with the captors during captivity.

7. The "pat on the shoulder, get back to normal as soon as possible" attitude is the wrong approach.

8. The mental health worker should know as much as possible about the person prior to being taken hostage: his personal history, his family history, his adjustments or lack thereof, etc.

9. Help the hostage to slowly loosen the group ties. There is a group cohesion even if the groups have been broken up by the terrorists. These group ties should be eased out of and not broken off precipitously.

10. Assure sleep. Do not give REM inhibitors. Much preferred are anti-depressant and anxiolytics (i.e., anxiety reducing drugs). For example, Tofranil PM about one hour before bedtime but not during the day time hours is a good choice.

11. In the event of severe nightmares, awaken the person fully, then give a barbiturate drug or valium.

12. The hostages should not be exposed to the press. There is a tendency to say things that can later be very problematic or difficult to deny. There should be a single spokesman, an official spokesman who is counseled by the mental health team, or better yet, one representative of the treatment team could serve as a spokesman. The importance of this last guideline cannot be overemphasized.

demands. The captor expresses the threat of extreme violence to the victim primarily to the third party if their demands are not met. This creates the illusion to the victim that the terrorist captor would not harm him if the third party gave into their demands. This use of the victim as leverage lays the grounds for intense pathological transference. This transference is both accelerated and heightened when the hostage has already been psychologically traumatized by terror. These two components, traumatic psychological infantilism and pathological transference, form the crucial elements in the Stockholm Syndrome.

During the seige, while the victim is still being held hostage, it is important not to disturb the development of the pathological transference. It must be left alone. Disturbance of the pathological transference while the victim is held hostage would only activate the terror in the victim and may produce hopelessness that may result in panic terror behavior in the victim. The victim might then act desperately, such as running out, even into death. The negotiator must try to reinforce the pseudo-helping efforts of the terrorist to the victim. Rescuers must make no plans of utilizing in any way the victim's cooperation in escape plans. They must remember that to a victim of terror, "an open door is not perceived as an open door."

The suffering of the victim is the leverage used for negotiations with a third party. Hostages, in their psychologically traumatized state, never view negotiations for their release as benevolent. The victim would gladly give all for his release. He interprets and experiences any negotiation as endangering him. He then perceives negotiations, especially if protracted, as indifference, hostility, rejection, non-loving and life threatening by the very people who are negotiating for his release. This reinforces the pathological transference already developed by the prolonged exposure to the terrorist.

PSYCHOLOGICAL CARE OF VICTIMS

1. Provide early restoration of power to the victim by asking permission to interview them, e.g., "Is this a good time to talk with you?" or "Do you mind if I ask you some questions?" Be active, but don't be pushy. Do not adopt the usual waiting stance familiar to psychotherapy. Be available, but do not force yourself upon the hostage or the family.
2. Reduce the victim's feelings of isolation by nurturing behavior, thus diminishing the experience of hostile environment to which the victim was subjected.
3. Diminish the helpless, hopeless feelings of the victim by having him make input into determination of his present or future behavior in terms of space and time.

This traumatic infantilism compels the victim to cling to the person who is endangering their life. It accounts for the obedient, placid, compliant, and submissive behavior seen in victims.

Pathological Transference.

If the atmosphere of terror still persists and the psychologically traumatized victim perceives that the terrorist, who has power of life and death over him, is letting him live, profound and persistent attitudinal and behavioral changes occur. The victim now perceives the criminal as the "good guy." This phenomena is called "pathological transference." Symonds noted this reaction repeatedly in men, women, and children under the conditions of perceived extreme threat to life.

e.g., A detective undercover agent making a buy of narcotics was held captive for 3 and a half hours while the criminal gang deliberated whether to "waste him" or not. However, the leader of the gang said, "no." Finally the detective's back-up team was able to locate him and rescue him. Symonds interviewed this detective two months later. The detective kept relating what a good guy the leader was. For two hours he repeatedly stated, "He could have killed me and he didn't." His superiors who were present kept yelling at the detective--expletives deleted--what a mean bastard that crook was, but this undercover agent persisted in defending the criminal.

In another situation, an off-duty policeman was held captive when he walked in and interrupted a robbery. When the criminals found out that he was a policeman, the two gunmen decided to kill him. They placed a bag over his head and made him kneel on his knees. He later said, "Silly as it may seem I was glad it was going to be in the head because I thought it would be quick." He heard the robbers discussing him, and then they left. He wasn't shot. Two of the robbers were caught months later. Jerry, the policeman, was involved in their capture. The captured robber said to him, "You owe me something. I saved your life." The detective visited the man many times. A close relationship developed, and the policeman said to him, "If you need me, I'm there for you because you were there for me at that time."

Pathological transference only occurs when someone threatens your life, deliberates, and does not kill you. The victim no longer experiences the threat, but the feeling he has been given life by the criminal. Pathological transference does not occur or instantly evaporate when the person is shot at.

Pathological transference is a consistent finding in individuals held hostage by criminal terrorists. Hostage victims are essentially instrumental victims. They are used and exploited by their captors to exert leverage on a third party (the family, police, or the government) to accede to their

him afterwards. Upon release other hostages puzzled over their feeling reflected: "Why don't we hate the robbers?" These "original" victims in the Stockholm incident still visit their abductors, and one former hostage is engaged to Olofsson.

Similar affections with or without sexual relationships have been described in kidnappings and sieges. In some incidents, former hostages have also visited their former captors in jail, and in other instances they have set up defense funds for their captors.

With respect to how long it takes for a hostage to experience the effects of the Stockholm Syndrome, while the positive bonds do not form immediately, they nevertheless seem well established by the third day.

Factors which seem to promote the Stockholm Syndrome are the intensity of the experience, the duration (but after three or four days, duration has little meaning), the dependence of the hostage on the captor for survival, and the psychological distance of the hostage from the government.

The Stockholm Syndrome has considerable significance for all concerned. Police negotiators cannot confide in the hostages if an assault is planned; a warning cannot be delivered in advance. Additionally, the prosecution has lost its star witness, and the terrorist cause may be promoted. Trust between the government and the public at large is strained if not undermined. But on the other hand, life is spared. This positive bond protects both hostage and hostage-taker. Insofar as life is spared, all parties come out ahead.

Traumatic Psychological Infantilism.

In terrorized individuals the sudden threat to life causes an acute dissociative response. There is a paralysis of affect with narrow constriction of cognitive and motor functions to serve purely one function--namely, survival. In their frozen fright, the victim narrowly focuses all energy on survival, exclusively concentrating on the terrorist. This reaction is enhanced by the criminal terrorist's intent to totally dominate the victim. He creates a hostile environment and thwarts any effort that would reduce this domination. The victim then feels isolated from others, powerless, and helpless.

The triad of being in a hostile environment, feeling isolated, and feeling helpless produces a profound reaction which Karen Horney called "basic anxiety." Under conditions of terror, this causes the adult to lose the use of recently learned experience and to respond with the early adaptive behavior of childhood for survival. Symonds calls this response in victims "Traumatic Psychological Infantilism."

It is important to note that while these variables mitigate the psychological response to disasters and traumas, that extreme degrees of stress will produce symptoms of psychological disability in all who are exposed to them.

THE STOCKHOLM SYNDROME

The positive feelings of the captives toward their captors that are accompanied by negative feelings toward the police. These feelings are frequently reciprocated by the captors. To achieve a successful resolution of a hostage situation, law enforcement must encourage and tolerate the first two phases so as to induce the third and thus preserve the lives of all participants.

At 10:15 a.m., on Thursday, August 23, 1973, the quiet early routine of the Sveriges Kreditbank in Stockholm, Sweden, was destroyed by the chatter of a submachine gun. As the clouds of plaster and glass settled around the sixty stunned occupants, a heavily armed, lone gunman called out in English "The party has just begun."

The "party" was to continue for 131 hours, permanently affecting the lives of four young hostages and giving birth to a psychological phenomenon subsequently called the Stockholm Syndrome.

During the 131 hours from 10:15 a.m. on 23 August until 9:00 on 28 August, four employees of the Sveriges Kreditbank were held hostage. They were: Elisabeth Oldgren, age 21, then an employee of 14 months working as a cashier in foreign exchange, now a nurse; Kristin Ehnmark, age 23, then a bank stenographer in the loan department, today a social worker; Brigitta Lundblad, age 31, an employee of the bank; and Sven Safstrom, age 25, a new employee, today employed by the National government. They were held by a 32 year old thief, burglar, and prison escapee named Jan-Erik Olsson. Their jail was an 11 x 47 foot carpeted bank vault which they came to share with another criminal and former cellmate of Olsson, Clark Olofsson, age 26. Olofsson joined the group only after Olsson demanded his release from Norrkoping Penitentiary.

This particular hostage situation gained long-lasting notoriety primarily because the electronic media exploited the fears of the victims as well as the sequence of events. Contrary to what had been expected, it was found that the victims feared the police more than they feared the robbers. In a telephone call to Prime Minister Olaf Palme, one of the hostages expressed these typical feelings of the group when she said, "The robbers are protecting us from the police." One of the young women had intimate relations with the the robber, Olsson, in the vault and lasting affection for

STRESS RESPONSE

General Adaption Syndrome. Selye defined this general pattern of the human organism's stress response.

State I is Alarm. At first the body's resistance is lowered (shock phase) and then resistance is raised as physiological defenses are mobilized (countershock phase).

State II is Resistance, during which maximum adaptation occurs. The pounding heart and nervous excitability of the alarm stage will have diminished, but the adrenal glands are enlarged, and the body is prepared to function with major organ systems at peak output. Should the state of stress persist until reserves are depleted, a final stage will be entered.

State III is Exhaustion. In this stage the individual will fall into a sleep which will be protracted if the environment allows such.

PSYCHOLOGICAL DETERMINANTS OF SUSCEPTIBILITY TO STRESS

How people react to overwhelming stress depends upon several variables:

- 1) The meaning of the traumatic experience. For a particular person, the meaning of the disaster will assist in shaping a response to the event. Frequently, the problem is the very lack of meaning, the indiscriminate nature of the tragedy, which leaves the victim without a sense of purpose to events and devoid of his former illusion of invulnerability and control. The need to attach meaning to the disaster may also be seen as a wishful attempt to give orderliness, a sense of control, and purpose to the disaster. Having some identified meaning to the traumatic event also allows the victim to assign blame and guilt. The ultimate anxiety occurs when this maximal mobilization of coping mechanisms fails to yield a logical meaning and understanding of events.
- 2) The nature of a person's relationships with others is also a key element. If relationships are stable and strong, they are resources for reorganization. Stress is a very isolating experience. In addition, helplessness, dependency, and survivor guilt, which may follow the trauma, can contribute to low self-esteem. A realistic sense of self is always strongly supported by close human interaction.
- 3) A past reserve of emotional experiences is important. Past emotional experiences determine the strength of one's stimulus barriers, how one handles the enforced state of dependency and helplessness, and whether or not one allows the traumatic event later to become a projective screen for all past neurotic conflicts or whether one mobilizes more mature secondary defenses to cope.

temporarily stunned and bewildered during the disaster. In some of the long after the disaster phases are over, this bewildered state persists as apathy, aimlessness, underactivity, and depression--all early signs of long term effects. Tryhurst estimates that, during the disaster, approximately 10% will display inappropriate responses to the trauma, including confusion, paralyzing anxiety, and hysterical screaming.

PSYCHOLOGICAL RESPONSES OF HOSTAGES

Ochberg describes a four clusters of negative psychiatric sequelae which correlate with post-traumatic reactions. These often continue as delayed effects to the hostages period of captivity.

1) Anxiety responses. These tend to be seen soon after the event, although they may be triggered by anniversaries and incidents which stir memories long afterward. Nightmares, nightsweats, startle reactions to loud noises, inability to concentrate, and other symptoms of uncontrolled anxiety are not uncommon. The degree of emotionality may lead to self-medication, drug abuse, alcohol abuse, and dietary changes detrimental to health. Symptomatic treatment is indicated and is important. In addition, the clinician should consider earlier trauma which may have been awakened by the latest episode.

2) Physical and psychophysiological complaints. Exactly how physical ailment is connected to psychological stress is still debated. It should be remembered that there is a great deal of physical stress in the captivity situation as well. There may be head injury, dehydration, contaminated food, frostbite, and a host of other stressors. Thorough medical examination and re-examination is indicated.

3) Depression. In concentration camp literature, anhedonia is often mentioned, a pervading joylessness which lasts decades and seems impervious to therapy, to reunion with loved ones, and to successes in any sphere in life. There is a hint that depression deepens as the memories and positive feelings associated with the dramatic event fade. This is a loss like any other, and reactive depressions often follow losses, particularly when one has felt ambivalent about the person or object which is lost, and normal grief is inhibited.

4) Paranoid pattern of thought. Negative feelings are projected and victims feel watched, threatened, and persecuted. There may be a grain of truth in these feelings. The ex-hostage is suddenly a public figure, and his story is known by strangers. If he speaks ill of his captor, he may feel reprisal on very rational grounds. But for some victims, and family members as well, the fear is out of proportion to reality and takes on the characteristics of a delusion--a fixed, false belief.

In view of the fact that demographic data on the troops had been collected, and that the attitudinal data had suggested a "racial intervention orientation" factor, it was decided to analyze the data by race to determine the extent, if any, of Black-White differences. All 16 of the Factor I variables (General orientation towards deployment) were analyzed, using the Mann-Whitney U statistic. Over 40% of the comparisons of Black vs. White troop attitudes were found to differ from each other to a statistically significant degree (see Table 3). The findings are summarized below (the lower the mean attitude score, the more favorable the attitude towards deployment):

- (1) On invasion of the U.S. by a foreign enemy, white troops showed a significantly higher tendency towards deployment, $p=.0000$.
- (2) On invasion of a U.S. ally in Western Europe, white troops showed a significantly higher tendency towards deployment, $p=.0331$.
- (3) On rescuing American civilians who are in danger in an overseas country, white troops showed a significantly higher tendency towards deployment, $p=.0033$.
- (4) On an overseas war which the American people wholeheartedly support, white troops showed a significantly higher tendency towards deployment, $p=.007$.
- (5) On restoring law and order in a disaster area, white troops showed a significantly higher tendency towards deployment, $p=.0024$.
- (6) On stopping the violence of whites opposing efforts to integrate public institutions, black troops showed a significantly higher tendency towards deployment, $p=.045$ (one-tailed).
- (7) On stopping the violence of Blacks threatening private property, white troops showed a significantly higher tendency towards deployment, $p=.0252$.
- (8) On attacking a band of revolutionaries, white

troops showed a significantly higher tendency towards deployment, $p=.0229$.

An abbreviated correlation matrix of factor-relevant items is presented in Table 4.

Discussion

Segal, et al. (1984), in assembling their assessment instrument, had, on the basis of previous research, chosen certain items dealing with various hypothetical deployment scenarios, ones which seemed to logically group along the dimension, "foreign vs. domestic deployment situations". Theoretically, it would seem that factors corresponding to the two groups would have emerged. It is thus noteworthy that one factor was found which embodied 16 of both domestic and foreign deployment situations. Although these variables load fairly highly on the factor, inspection of the correlation matrix in Table 4 showed that few, if any of the individual "domestic" variables correlate at all with any of the "foreign" ones. For practicality's sake, we have offered a label, "General orientation towards deployment", with the suggestion that some other causal factor exerts its influence among both "domestic" and "foreign" measures of deployment orientation.

Although two measures of orientation to deployment in racially-oriented situations are included among those loading heavily on the first factor, they, plus one other, taken together, constitute a factor of their own, and it was this outcome, together with the lack of attention paid by Segal, et al. to the demographic data in their analysis, that encouraged us to seek out any potential differences between the races on the various attitudinal measures.

The subsequent analysis resulted in a comparison, between black and white respondents, of

the 17 general deployment orientation variables. A word of caution might be noted: there was a disproportionate number of whites compared to blacks in the sample; while this might have been considered a biasing factor, it may be noted that over half of the comparisons showed no significant differences between races.

In general, within the specific subset of subjects which we were looking at (pre-deployment Sinai subjects), orientation across races towards deployment is generally positive; troops in general are more likely than not to volunteer, or feel positively about the mission when ordered to go. However, as noted above, in approximately 40% of the white-black comparisons, there were racial differences noted in the mean ranked attitude scores. Although there was an overriding tendency to be positively oriented across races, it was revealed that white troops felt significantly more positive towards deployment for the purposes of invasion of the U.S. by a foreign enemy, invasion of a Western European ally, rescuing American civilians in danger overseas, involvement in a war that is popular at home, restoring law and order during a disaster, stopping the violence of blacks threatening private property, and attacking a band of revolutionaries. In one instance, that of stopping the violence of whites opposing efforts to integrate public institutions, blacks showed a significantly more positive orientation towards deployment than did white troops. Equally noteworthy, however, are non-significant differences: blacks and whites showed equal positive orientation towards putting down race conflicts in which blacks and whites are fighting each other, dealing with campus riots and strikes, fighting a war unpopular at home, protecting foreign installations, fighting in a foreign country's civil war, fighting in the Middle East, or in the Far East.

The fact that there do seem to be some

racial differences among deployment motivations and attitudes really suggests that other variables which are highly correlated demographic variables, such as SES, education, time in service, and training may all play a role additively in determining motivation and orientation towards specific types of deployment. Additionally, the fact that blacks and whites seem to differ in motivation in the area of civil disturbances, relative to the racial population involved in the disturbance, suggests that personal (political) philosophy may be central in accounting for motivation in deployment situations. This would imply that to the extent that troops can be made aware of the importance or relevance to themselves of the action to be taken, they will be that much more motivated to involve themselves in it. Without such education or information dispersal, troops are more or less left to their own devices in making inferences about the meaning of or reason for their role; thus groups will differ in motivation, or even lose motivation across groups if little information is available, or if little "sense" can be made of the action by the total deployment force.

Segal, et al. (1984) made reference to the potential importance of preparing troops for what could prove to be a boring time for the more combat-oriented. The obvious implication is that if an "inoculation" procedure of sorts, which would prepare troops for the experience of constabulary duty, could be designed and implemented, it could conceivably have even greater utility if efforts were to be made to emphasize to the troops the long-term effects of their efforts, as they related to each soldier as an American, Black or White person, man or woman, or along whatever specific dimensions are found to be relevant to the issue. Seemingly, the greater the soldier's sense that "there's something in this for me", the greater the motivation to enter on and succeed in the mission. In the interest of designing such an "inoculation"

procedure, further analyses could be done in the way of comparing deployment attitudes relative to such variables as age, marital status, education, and even various, and as yet to be specified, personality variables measurable from standardized assessment instruments. These are surely fertile areas for future research.

Table 1
16 Items Loading Heavily on Factor I

<u>Item</u>	<u>Factor loading</u>
Invasion of U.S.	0.62246
Invasion of Western European ally	0.67481
Fighting in the Far East	0.73912
Fighting in the Mid East	0.58106
Fighting in a foreign civil war	0.64926
Rescuing endangered Americans overseas	0.63907
Protecting foreign installations	0.69437
Fighting a war popular at home	0.63455
Fighting a war unpopular at home	0.53092
Dealing with riots on campus	0.56550
Restoring law and order during disaster	0.56582
Dealing with strikes	0.56508
Attacking a band of revolutionaries	0.62877
Blacks threatening property	0.57012
Whites opposing forced integration	(0.47532)*
White-Black racial conflicts	0.58235
Protecting public institutions	0.58949

Table 2
3 Items Loading Heavily on Factor II

Blacks threatening property	0.57878
Whites opposing forced integration	0.51552
White-Black racial conflicts	0.60445

*Did not meet our criterion; included for purposes of interest only.

Table 3
Mean Attitude Scores by Race
on Heavily Factor-loaded Variables
(lower score=more positive orientation)

<u>Variable</u>	<u>Blacks</u>	<u>Whites</u>
Invasion of U.S.*	1.92	1.22
Invasion of western ally *	1.88	1.62
Fight in the Far East	1.76	1.88
Fight in the Mid East	1.80	1.78
Fight in a foreign civil war	2.04	2.06
Rescue Americans overseas*	1.80	1.31
Protect foreign installations	1.68	1.66
Fight a popular war *	2.04	1.53
Fight an unpopular war	1.88	1.99
Dealing with campus riots	2.16	1.84
Restoring law and order:disaster*	1.80	1.27
Dealing with strikes	2.12	1.87
Attacking revolutionaries *	1.71	1.48
Blacks threatening property *	1.92	1.56
Whites opposing integration **	1.58	1.89
White-Black racial conflict	1.72	1.65
Protecting public institutions	1.92	1.81

* Significant below the .05 level of significance, two-tailed.

** Significant below the .05 level of significance, one-tailed.

Table 4
Abbreviated Kendall Tau B Correlation Matrix
of Factor-relevant Items

Variable	1	2	3	4	5	6	7	8	9
1		.53	.50	.38	.28	.67	.47	.48	.32
2			.80	.59	.55	.50	.62	.62	.49
3				.65	.65	.48	.70	.62	.53
4					.49	.42	.53	.41	.23
5						.42	.53	.60	.57
6							.45	.55	.36
7								.64	.48
8									.57
10	.18	.16	.29	.08	.24	.16	.27	.11	.26
11	.33	.24	.27	.25	.13	.35	.25	.21	.10
12	.14	.14	.26	.16	.17	.24	.30	.09	.25
13	.51	.33	.27	.21	.18	.36	.31	.27	.13
14	.32	.18	.19	.05	.15	.22	.11	.07	.07
15	.11	.13	.16	.00	.21	.12	.15	.08	.12
16	.31	.13	.18	.05	.16	.23	.14	.06	.08
17	.23	.19	.26	.20	.25	.28	.38	.14	.19
10	<u>.10</u>	<u>.11</u>	<u>.12</u>	<u>.13</u>	<u>.14</u>	<u>.15</u>	<u>.16</u>	<u>.17</u>	
11		<u>.46</u>	<u>.60</u>	<u>.44</u>	<u>.54</u>	<u>.46</u>	<u>.57</u>	<u>.49</u>	
12			.45	.47	.42	.26	.36	.38	
13				.37	.51	.41	.53	.37	
14					.63	.40	.61	.41	
15						.71	.75	.50	
16							.68	.34	
17								.48	

Note: correlations of .20 or greater are significant at or beyond the .05 level.

Table 4 (con't)

<u>Variable number</u>	<u>Variable</u>
1	Invasion of U.S.
2	Invasion of western ally
3	Fight in the Far East
4	Fight in the Mid East
5	Foreign civil war
6	Rescue Americans OCONUS
7	Foreign installations
8	Fight a popular war
9	Fight unpopular war
10	Deal with campus riots
11	Deal with a disaster
12	Deal with strikes
13	Attack revolutionaries
14	Blacks threaten property
15	Whites opposing busing
16	White-Black conflict
17	Protect public buildings

aining and program compliance. The role of personality variables in cardiac rehabilitation programs for post-myocardial infarction (MI) patients has only recently been investigated. The issue of MI is complicated by specific personality factors, that is, Type A characteristics, which influence the development and clinical manifestations of this pathological process.

The Type A individual has been characterized by extremes in competitiveness, time urgency, achievement striving, and aggressiveness. Conversely, Type B individuals are those who manifest relatively few of these qualities. The Type A pattern has been demonstrated to be an independent risk factor in the development of cardiovascular disease.¹ One route of pathologic manifestation of cardiovascular disease for the Type A has been proposed to be in the strong relationship between cardiovascular reactivity and exposure to a variety of real life stressors. This heightened physiological reactivity has been suggested to play a major role in the developmental process of cardiovascular pathology via "over stressing" the cardiovascular system.

Evidence suggests that circulating catecholamines may differ for Type A's and B's and may underlie the development of cardiovascular pathology via the sympathetic adrenal medullary system.² The catecholamines, epinephrine and norepinephrine, have been directly implicated in the genesis of cardiovascular pathology (e.g., endothelial lesions) and indirectly via the atherosclerotic process. It follows, "that any agent which increases circulating catecholamines may be a potential pathogen for cardiovascular function."

Because Type A's and B's differ along a variety of measures of perceived performance one might expect them to differentially react to physical exercise based on perceptions of effort. During the 1950's, Gunnar Borg examined idiosyncratic differences in perception of work intensity during exercise, subsequently developing a theory of how individuals evaluate exercise intensity.³ This theory has been operationally translated into a self-report measure to quantify perceived levels of physical exertion - the Borg scale.⁴ The Borg Rate of Perceived Exertion (RPE) scale has been utilized primarily to elicit work load perceptions during exercise, and compares a person's perceived level of exercise intensity with his/her actual level of physiological mobilization (e.g., via heart rate).

There has been little examination of the role of catecholamine reactivity with the Type A during an aerobic exercise. Frankenhauser measured urinary catecholamine metabolites (vanillylmandelic acid) during an intermittent aerobic workout and found that subject's perceived exertion ratings correlated positively with urinary catecholamine metabolite levels.⁵ A problem with such indirect catecholamine assays is that the measurement may reflect general levels of reactivity prior to the actual testing protocol. Since peripheral epinephrine and norepinephrine levels are transient in existence and excretory rates may vary greatly from moment to moment, measurement of plasma catecholamine levels at predetermined time intervals during a very stressful event would provide a more accurate assessment of biochemical reactivity.

The present study was undertaken to determine if a relationship exists between cardiovascular and catecholamine reactivity for the Type A and Type B subject during a physically stressing ergometer task.

Method

Subjects

Eighteen undergraduate white males voluntarily participated in this research. All subjects were informed with regard to experimental procedures and risks, and gave their written informed consent to participate. All procedures were designed in accordance with the ethical guidelines of the American Psychological Association and were approved by The Committee on the Conduct of Human Research, Virginia Commonwealth University. Each individual was in good health and denied any personal or familial medical history of substance abuse, cardiovascular disease, high blood pressure, or pulmonary disease. The mean physical characteristics of the subjects are presented in Table 1. These subjects were selected from a student volunteer group on the basis of their scores on the Jenkins Activity Survey - Student Version. Subjects were chosen, based on pilot data and research cutting scores, so that nine scored as Type A and nine scored as Type B.

Procedure

The experiment consisted of three sessions. During the first session an assessment of each individual's level of physical fitness ($\dot{V}O_{2\max}$ assay) was completed. The $\dot{V}O_{2\max}$ procedure controlled for differences in levels of physical fitness which could confound the two subsequent experimental sessions. The protocol for the $\dot{V}O_{2\max}$ procedure followed standardized procedures.⁸ Briefly, each subject exercised on a Quinton electromechanically braked cycle ergometer, with the pedalling frequency maintained at 60rpm by an audiovisual metronome. The ergometer workload was increased stepwise by approximately seventeen watts (one hundred kilograms per minute) until the subjects experienced biochemical fatigue and could not continue. The metabolic data was collected by open circuit spirometry methods, utilizing a Collins Triple-J valve connected by tubing to a Parkinson-Cowan dry gas meter and a Beckman LB-2 CO_2 and OM-11 O_2 gas analyzers. The gas analyzers were calibrated with commercially prepared gas mixtures and verified by gas chromatography. A $\dot{V}O_{2\max}$ value (ml O_2 /kg body weight/minute) was determined from the highest oxygen consumption value recorded during the stress test.

The second and third "experimental" sessions were scheduled at the same time of day exactly one week apart. The physical stressor employed in these two sessions was based on the subject's $\dot{V}O_{2\max}$ level. In order to stress all subjects equivalently, subjects were required to exercise for nine minutes at sixty percent of their $\dot{V}O_{2\max}$ level. In this manner, variations in level of fitness between subjects were controlled. Normal levels of room light, humidity (less than 60%) and temperature ($22^\circ C \pm 1^\circ C$) were held constant for all

subjects. Precise measures of ambient temperature, barometric pressure, and humidity were recorded for use in determining $\dot{V}O_{2\max}$ levels. The protocol for both test days was as follows: after the subject entered the laboratory his body weight was recorded and EKG electrodes were attached in a modified CM-5 configuration. The subject was asked to rest in an adjacent room for fifteen minutes. After this interval a 21x3/4-gauge indwelling butterfly needle was inserted into the left arm antecubital vein. The baseline blood sample was drawn after a thirty minute rest period. Three additional blood samples were drawn during the first, fifth, and the ninth minute of exercise. The seven milliliter venous samples were obtained from free flowing blood with the subject in a sitting position. After each sample was collected, the needle and tubing were flushed with a 1:1000 dilute sodium heparin solution. A heparin lock thus maintained catheter patency between samplings. The collected blood was immediately transferred into chilled vacutainers containing EDTA and centrifuged at 3500rpm for fifteen minutes. All plasma samples were then stored at minus twenty degrees Celsius until catecholamine analyses were performed. Plasma epinephrine and norepinephrine assays were completed via high performance liquid chromatography coupled with electrochemical detection.

At the end of the first minute of exercise and every two minutes hereafter the subject was asked to look at the Borg scale and rate is level of perceived exertion. Specifically, the Borg RPE Scale is a bipolar linear scale composed of whole numbers from 6 to 20. Every odd number has an attached referant expression ranging from "very, very light" at 7 to "very, very hard" at 19. The numbers are estimates, by a dividend of ten, of the subject's heart rate.

During this perceptual acknowledgment of effort, measures of heart rate were recorded continuously and systolic and diastolic blood pressure were recorded every minute. Heart rate was obtained from the M5 bipolar electrocardiogram. Systolic and diastolic blood pressure were recorded on a Narco physiograph DMP/4A with the aid of a Narco-Systems preprogrammed electrosphygmomanometer.

Results

Comparison of Type A and Type B subjects on morphological characteristics utilizing one-way analyses of variance (ANOVA) procedures showed no significant differences between these groups for any anthropometric measurement (see Table 1). Of particular note is that both Type A's and Type B's evidenced statistical and clinical concordance in levels of physical fitness ($\dot{V}O_{2\max}$ assay).

Analysis of the cardiovascular variables of heart rate, and systolic and diastolic blood pressure, from minutes 0, 1, 4, 6, and 9, were subjected to an analysis of variance with repeated measures procedure. Similarly, the catecholamine variables were analyzed by a similar ANOVA differing only in minute of measure; i.e., minutes 0, 1, 4, 6, and 9.

Cardiovascular and catecholamine differences between Types were demonstrated during the exercise stressor with Type B's demonstrating

Figure I

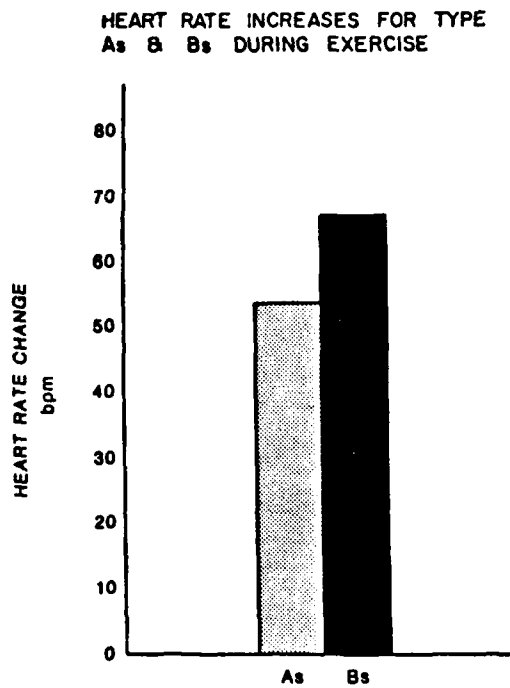


Figure II

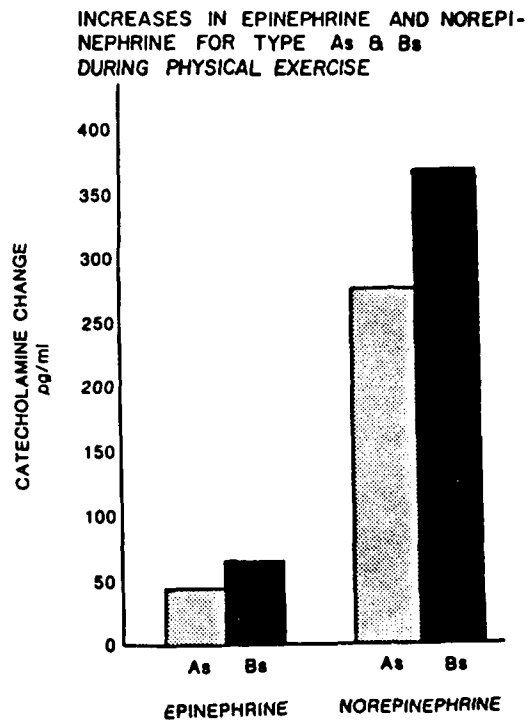


Figure III

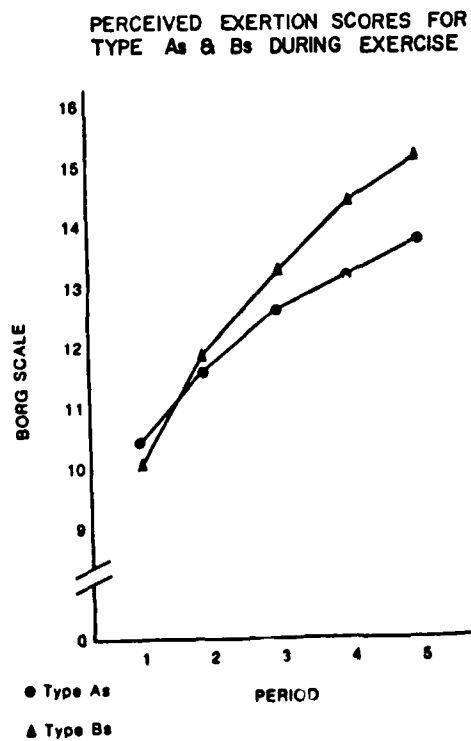


Table 1

Morphological Comparisons between Type A and Type B Subjects

	Type As	Type Bs
HT	\bar{X} =175.0 cm (68.9 in) sd=11.4 cm (4.5 in)	\bar{X} =182.4 cm (71.8 in) sd= 9.1 cm (3.6 in)
WT	\bar{X} =67.7 kg (149.1 lbs) sd=6.9 kg (15.2 lbs)	\bar{X} =70.0 kg (154.2 lbs) sd=7.3 kg (16.0 lbs)
	\bar{X} =21.0 yrs	\bar{X} =19.8 yrs
VO ₂	\bar{X} =48.2 ml/kg/min	\bar{X} =47.0 ml/kg/min

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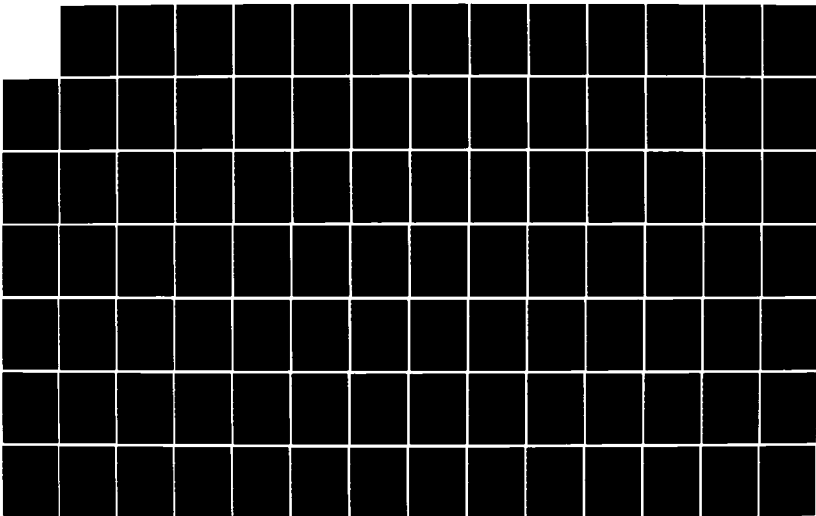
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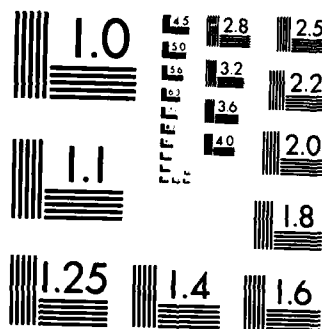
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MICROCOPY RESOLUTION TEST CHART
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significantly greater heart rate, epinephrine, and norepinephrine increases than did their Type A counterparts (see Figures I and II).

Absolute scores on the Borg Scale were compared by a repeated measure ANOVA. All subjects rated their perception of physical exertion as increasing across the exercise session, with each report being significantly greater than the last. The interaction between Type A's and B's for perceived exertion over periods of measure was significant. Figure III shows the increase in perceived exertion over time was greater for the Type B group than their Type A counterparts. Clearly, this difference between groups is only meaningful beyond the first few minutes of exercise.

None of the cardiovascular and catecholamine variables examined in this study showed statistical differences across experimental weeks indicating that the subjects reacted in a physiologically similar manner on both experimental weeks.

Discussion

Postexercise cardiac failure is a frequently occurring and widely recognized phenomenon today.¹⁰ The recent increased popularity of vigorous exercise has resulted in the examination of perceptual levels of exertion in order to provide self-monitored feedback for modulating physical work levels.

The importance of the individual's perception of exertion during work (e.g., exercise) or at leisure is of a major medical diagnostic concern. The subjective strain noted after a severe decrease of physical working capacity is a strong determinant to seek medical assistance. The need to devise better methods to measure perceptual intensities led to the development of the Borg RPE Scale. High correlation coefficients between ratings of perceived exertion and heart rate has been reported by Borg ($r=.85$).¹¹ As evidence by the data in this investigation, during the last minutes of exercise both Type's heart rates could accurately be predicted by their report on Borg scale levels.

In a recent review of the effects of cardiac disease upon pulmonary function during exercise, Shephard alludes to the possibility that some Type A patients underrate the sensations of effort, thus leading to the dangerous situation of wrongly gauging their physical efforts, and as a consequence, overexertion of physiological capacities.¹² The findings of our study substantiate Shephard's speculation: exercising at identical work levels Type A's underrated their levels of exertion compared to Type B's. Even though both groups exercised at the same work load level, the Type A felt he was exercising at a lower load. These distorted perceptions for the Type A group may result in an inaccurate perception of dangerous strain, leading to overexertion. Lazarus makes the point that denial-like process (e.g., underestimation of physical exertion) can be maladaptive when it interferes with direct action against a damaging or threatening environmental event.¹³ For example, the person who refuses to admit the pains in their chest, in addition to a significant underestimation of physical effort, may delay seeking medical

attention, and continue to push themselves physically, significantly diminishing their chances for survival. The ability to accurately assess work load may be the critical factor in effective intervention.

Our findings provide a viable explanation of the increased recurrence of myocardial infarction via overexertion for the Type A as observed by the Western Collaborative Group Study.¹⁵ In a recent investigation by Dimsdale and coworkers, it was demonstrated that catecholamine response to exercise is effort dependent for both non-epinephrine and epinephrine.¹⁰ This observation, coupled with a concomitant underestimation of physical effort, provides a plausible explanation for the comparatively higher rate of cardiovascular pathology for the Type A individual.

The simplicity of the Borg scale, its strong relationship with heart rate, and the sensitivity of the rate perceived exertion for controlling exercise intensity have made it an attractive tool in clinical programs. Cardiac rehabilitation programs could, for example, use rate perceived exertion, modified for a patient's Type A potential, for controlling exercise intensity levels outside of directly supervised therapy milieus. This investigation would suggest that exercise should be anchored to external referents such as timed cadence.

The results of this study suggest that the psychophysical process of estimating effort intensity during exercise is ongoing and may not be identical to the process of reproducing physical work levels from memory. This is important to emphasize when dealing with the Type A post-coronary infarct patient. Findings of this investigation strongly suggest that neither RPE values nor heart rate measures alone may be used as accurate indicators of dangerous strain, but that they complement each other. The development of an effective indicator of dangerous strain must involve an integration of all important risk factors. These factors are arrhythmias, blood pressure elevations, ST-segment depressions, body temperature changes, blood lactate levels, and hormonal excretions. The salient finding in this investigation demonstrates the importance of assessing a patient's Type A/Type B membership in addition to the aforementioned factors. Equipped with this information a considerably more precise exertional program of self-selected intensities can be made by the patient, possibly delaying and or preventing the incidence of recurrent infarction.

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ASSESSMENT

Norms for Motor Lateralization on the Halstead-Reitan

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Abstract

The degree to which the dominant hand is more efficient than the nondominant on motor tasks is commonly used in neuropsychological assessment to help lateralize upper motor neuron deficits. Interpretation of these data often rest on clinical lore, however, as few studies have examined dominant hand advantage in the normal population. This study presents findings from a sample of 144 non-neurological SS to show naturally occurring ratios.¹

In the standard interpretation of the Halstead-Reitan Neuropsychological Battery (HRNB), one of the methods of inference (Reitan, 1955) is comparison of the relative efficiency of the upper extremities on motor tasks. Slowness, weakness, or impaired problem-solving ability on one body side directs clinical attention to the possibility of a contralateral lesion.

The clinical rule of thumb (eg, Boll, 1981) has been that the dominant hand should show a 10% advantage over the nondominant hand in speed of finger tapping and strength of grip when measured in the standardized manner of the HRNB. On a complex motor problem-solving task, the Tactual Performance Test (TPT), the second trial (nondominant hand) is expected to be approximately 1/3 faster than the first trial (dominant hand), and the third trial (both hands) is expected to be 1/3 faster than the second. Assuming that motor efficiency is bilaterally intact, these improvements are largely due to learning effects and anxiety reduction as familiarity with the test increases. Speed of name writing is

¹The author wishes to thank Dr. Carl B. Dodrill, director of the Epilepsy Center, Harborview Medical Center, Seattle, for the kind use of data obtained at his lab.

expected to be approximately 3 ^{times} slower with the nondominant hand than with the dominant, when measured by the number of letters written per second (Dodrill, 1978).

When the nondominant hand performs as well or better than the dominant hand, suspicions arise that a performance deficit exists in the dominant hand. Similarly, when the nondominant hand is more than 10% slower on tapping, more than 10% weaker on grip strength, more than 3 ^{times} slower on name writing, or is not 1/3 faster on TPT than the dominant hand, it raises the possibility of impairment in the hemisphere contralateral to the nondominant hand.

To date there has been little normative investigation of the range of dominant-nondominant differences in the normal population. Fromm-Auch and Yeudall (1983) recently found a 30% decrease in time between dominant and nondominant TPT trials, supporting earlier clinical impressions; this percentage was constant across age and sex. They found a 10% advantage of the dominant hand in male tapping, but in females only a 5% advantage. No significant sex effects were found in intermanual difference scores for grip strength (males 6% dominant advantage, females 6%).

Bornstein (1984) also showed that females have less dominant hand advantage in tapping (3.8%) than males (7.1%). This sex difference was largely due to the inclusion of females over 40, whose dominant hand advantage disappears with age. Bornstein found no significant age, sex, or education effects on grip strength (males 6.4% advantage of dominant over nondominant, females 5.7%).

The current study examined dominant hand advantage in the normal population on four motor tasks: TPT, tapping, grip strength, and name writing.

Method

Subjects

The sample consisted of 144 individuals with no neurological or psychiatric history or symptomatology. There were 77 males and 67 females. The mean age was 29.15 (sd 11.29), range 9 - 69 years. The mean FSIQ was 110.17 (sd 15.10). There was no significant difference in age or IQ between males and females. The unimpaired status of the sample was corroborated by a mean HRNB Impairment Index of .23 (sd .26).

Procedure

SS were administered the complete Halstead-Reitan Neuropsychological Battery according to standard instructions (Reitan, no date) by technicians specially trained and periodically monitored to insure highly standardized administration. The score for tapping was the mean of five consecutive trials within five taps of each other; if this criterion was not met within 10 trials, the mean of the 10 trials was used. The grip score was the mean of two dynamometer trials on each hand. The speed of name writing was calculated as the

number of letters written per second. In all cases the percentage scores comparing hands were calculated by the formula nondominant/dominant (ND/D).

Results

Table I displays means and standard deviations for the variables. Because tapping and grip strength were significantly different for males and females, separate findings are reported for them.

Table II displays means and standard deviations for intermanual differences, expressed in ND/D percentages. Recall that "rule of thumb" expectations would be .90 for tapping, .90 for grip, .67 for TPT trial 2, .45 for TPT trial 3, and .33 for name writing.

Linear regressions of each variable's intermanual difference and age were performed in order to examine whether dominant hand advantage changes with increasing age. Table III displays these findings and indicates that relative dominance does not change as a factor of age, except perhaps between the first and second TPT trials, where with increasing age the relative advantage of the dominant hand was gradually lost. From 9 - 19 years old the mean ND/D TPT score was .69 (sd .24). From 20 - 49 years the mean score was .81 (sd .36). From 50 - 69 the mean was 1.00 (sd .33).

Finally, the effect of sex was considered. In no case was the intermanual difference score significantly different for males and females. Table IV presents the findings for males and females.

Discussion

Relative efficiency of the two body sides in neuropsychological motor testing is an important indicator of lateralized conditions. The clinical rule of thumb on the HRNB has been that the dominant hand should be 10% faster on tapping, 10% stronger on grip, and 33% faster on speed of name writing. On the TPT test the second trial (nondominant) is expected to be 1/3 faster than the first (dominant) trial, and the third trial (both hands) is expected to be 1/3 faster than the second.

This study corroborated several of these clinical expectations. ND/D tapping was .93 and ND/D grip .93, where the expectation was .90. ND/D name writing was .37, showing the expected advantage for the dominant hand. ND/D TPT was .80 instead of the .67 expected, showing less increase in performance speed across the first two trials than expected. E/ND TPT was .61, close to the .67 expected.

Regressions showed that these ratios do not change with age, with the possible exception of the ND/D TPT time. This suggests that with age there is less

learning effect demonstrable with the nondominant hand.

None of the ratios were significantly different for male and female groups, though the raw scores showed sex differences for tapping and grip.

This study will hopefully aid in interpretation of intermanual differences found in HRNB data.

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Table I

Sample Means and Standard Deviations

AGE	29.15	(11.29)
SEX	M 77 F 67	
FSIQ (WAIS)	110.17	(15.10)
HRB II	0.23	(0.26)
TPT D	6.47 min	(3.89)
ND	4.99	(3.50)
B	2.78	(2.10)
TOT	14.57	(9.58)
TAP MD	54.91	(6.30)
MND	50.87	(6.27)
FD	50.83	(5.00)
FND	47.02	(4.98)
GRIP MD	53.72kg	(9.29)
MND	49.94	(9.10)
FD	33.54	(6.39)
FND	30.41	(5.63)
NAME-		
WRITING D	1.98 let/sec	(.50)
ND	.72	(.26)

Table II

Intermanual Differences

TAP ND/D	.926	(.073)	.732-1.17
GRIP ND/D	.924	(.103)	.690-1.41
NW ND/D	.373	(.140)	.148-1.34
TPT ND/D	.804	(.344)	.280-2.31
B/ND	.610	(.282)	.170-2.63

Table III

Regression of Intermanual Differences with Age

TPT ND/D	R = .20	R square = .04	SEE = .338
	T(142) = 2.437	p = .0153	
TPT B/ND	R = .24	R square = .001	SEE = .283
	T(142) = -.288	p = .6886	ns
TAP	R = -.005	R square = .000	SEE = .073
	T(142) = -.062	p = .5019	ns
GRIP	R = .045	R square = .002	SEE = .103
	T(142) = .540	p = .5915	ns
NW	R = -.149	R square = .022	SEE = .139
	T(142) = -1.801	p = .0703	ns

Table IV

Intermanual Differences by Sex

AGE	29.79	(sd 11.94)	AGE	28.42	(sd 10.63)
FSIQ	110.82	(14.88)	FSIQ	109.14	(15.38)
TPT ND/D	.79	(.36)	TPT ND/D	.82	(.33)
B/ND	.61	(.20)	B/ND	.60	(.35)
GRIP ND/D	.93	(.11)	GRIP ND/D	.91	(.09)
NW ND/D	.37	(.11)	NW ND/D	.38	(.17)
TAP ND/D	.93	(.08)	TAP ND/D	.93	(.07)

Relationship of PASAT Performance and IQ

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Abstract

The Paced Auditory Serial Addition Task (PASAT; Gronwall, 1977) has been frequently used to identify slowing of information processing in head injured patients. Cognitive speed returns toward normal with recovery, and PASAT scores have been used as a measure of recovery from head injury as well as an estimate of the severity of injury.

The current study administered PASAT's to 76 subjects with no neurological, psychiatric, or head injury history. IQ's were estimated with the Shipley Institute of Living Scale (Shipley, 1940). Three findings were of interest: (1) Gronwall's belief that PASAT times are not related to age was supported; (2) a significant relationship with IQ was demonstrated, and separate norms for four IQ ranges were presented; (3) a substantial percentage (26%) of false positives was found using Gronwall's cutoff score of 3.45 seconds per correct response, and it is recommended that percentile scores be used instead.

Each year there are approximately eight million head injuries in the United States, of which 400,000 (200 per 100,000 population) require hospitalization (Caveness, 1977; Wilder, Note 1). Approximately 89% are considered mild, as there are no hard signs of neurological sequelae or need for medical intervention other than brief observation. Rimel, Giordani, Barth, Boll, and Jane (1981) define minor head injury as loss of consciousness for less than 20 minutes, a Glasgow Coma Scale score of 13-15, and hospitalization under 48 hours. Although these patients require little medical care, they frequently complain of post-concussive symptoms such as headache, dizziness, hypersensitivity to light and noise, irritability, fatigue, and poor memory and concentration (Stuss, Ely, Richard, Larochelle, Poirier, and Hadenholz, Note 2). While the etiology of these symptoms is unclear, they are usually unrelated to secondary gain (Irving, 1972), and may involve microscopic lesions in the brain (Oppenheimer, 1968). McLean, Dikmen, Temkin,

Myler, and Gale (1984) found disruption of major life activities (work, school, homemaking) in patients suffering apparently mild head injuries, and Rimel et al. (1981) discovered that 34% of patients who were employed at the time of their minor head injury were unemployed three months later.

Various measures have been developed to assess the severity of injury and the extent of dysfunction following head injury. Post-traumatic amnesia (PTA), the duration of time between injury and return of continuous memory, is often used as a measure of severity of injury (Bailey, McLaughlin, Levin, Gildenberg, and Madison, note 3; Russell and Nathan, 1946; Russell and Smith, 1961). However, this measure has not been found to be correlated with post-traumatic headache (Brenner, Friedman, Merritt, and Denny-Brown, 1944), time off from work, or degree and duration of reduction of information processing capacity (Gronwall and Wrightson, 1974). One difficulty with this measure is that more than half of patients are unable to accurately estimate the duration of PTA (Teasdale and Jennett, 1974).

Orientation is another function often assessed to estimate the extent of head injury. Levin, O'Donnell, and Grossman (1979) devised the Galveston Orientation and Amnesia Test (GOAT) to provide a measure of the disorientation and confusion many patients experience. Moore and Ruesch (1944) felt that disorientation reflected the severity of injury. The GOAT is correlated with PTA for those patients who can accurately estimate it, and is also correlated with the Glasgow Coma Scale (Teasdale and Jennett, 1974), a measure of the depth and duration of coma in more serious head injuries. However, it is quite common to find patients who are well oriented and yet complain of memory problems and slowing of thought process. Stuss et al. (Note 2) demonstrated proactive interference on memory tasks even in well-oriented patients with apparent good recovery from head injury. Gronwall (1976, 1977) and Gronwall and Wrightson (1974, 1981) demonstrated slowed information processing speed in patients with no other findings than their subjective complaints. It appears that there is subtle neuropsychological dysfunction even in patients with no apparent findings on medical or psychometric screening examination. These patients continue to complain of post-concussive symptomatology, and their performance at work declines. This presents the clinician with a dilemma: a patient who has no demonstrable neurological sequelae, yet who persists with polysymptomatic complaints and poor performance of routine work tasks.

Gronwall (1976, 1977) devised a test that is particularly sensitive to subtle cognitive problems in head injured patients. She noticed that these patients showed a decline in their rate of information processing, and that poor job performance was likely due to overload: "...jobs which he could previously have done easily now require his whole attention, and therefore soon tire him. Tasks which require simultaneous attention to a number of factors are quite beyond his capacity, and this he interprets by saying that he cannot concentrate. Stress mounts, and with it headaches and irritability." (Gronwall and Wrightson, 1974). Gronwall's test, the Paced Auditory Serial-Addition Task (PASAT) is considered a measure of "'channel capacity' - the amount of information that can be handled at one time." This can be "...inadequate either if the number of items demanding simultaneous attention is too

supported. Differences with respect to gender were found within the brain damage group when comparisons of mean MMPI profiles were made. The male brain damage group had significant elevations on scales 2,5,7, and 8, as compared to the mean female profile. Also, in the present study discriminant function classification formulas were derived which predicted group membership at approximately an 80% hit rate. Future research cross-validating these classification formulas is necessary to document their clinical usefulness.

Interest in the Minnesota Multiphasic Personality Inventory (MMPI) as a screening tool in the discrimination of brain-damaged from functional psychiatric individuals is reflected in the quantity of research literature that has been devoted to this topic. Many investigators have attempted to evaluate the utility of the MMPI for this purpose, however, the research has yielded rather equivocal results. The research strategies or approaches using the MMPI for this discrimination have primarily fallen into two classes: (1) profile analysis methods, and (2) the use of organicity scales. The most common profile analysis method has been to elicit MMPI profile characteristics or code types unique to brain damage and not typical of other psychiatric disorders, (Gilberstadt & Duker, 1965; Lachar, 1974). The research attempts in this direction have largely been disappointing. Another profile analysis method attempts to set scale cutting-scores which differentiate OBS from functional psychiatric profiles, (Ayers, Templer & Ruff, 1975; Lowenfeld, & Wadsworth, 1975; Russell, 1977; Watson, Plemel, & Jacobs, 1978; Golden, Sweet, & Osmon, 1979). Little research has attempted to cross-validate the various scales cutting-score methods described in the literature. A third profile analysis method for discriminating brain-damaged from non-brain-damaged psychiatric groups with the MMPI is the development of profile decision rules. This strategy involves a series of yes-no questions about the MMPI profile which leads to the classification into an OBS or functional psychiatric group. Attempts using this approach have been made by Russell (1975), Watson and Thomas (1968), and Markowitz (1973). Thus far these decision-rule approaches have not been widely cross-validated.

The second approach toward differentiating non-brain-damaged from brain-damaged patients has been the development of organicity scales derived from the MMPI. The first of such scales was developed by Hovey (1964) and is comprised of 5 MMPI items. Other investigators have similarly attempted to establish organicity scales (Watson, 1971; Shaw and Matthews, 1965; and Watson and Plemel, 1978). The validation research on these scales has been extremely variable.

organicity scales, profile

In the present study the literature was reviewed and 21 characteristics, and profile decision-rules were found that had been described or developed for discriminating brain-damaged from functional psychiatric patients with the MMPI. The research on the validity of each strategy was either limited or produced inconsistent results. Research including female subjects has been sparse and even more equivocal. Only one study (Graca,utzell, Gaffney, & Whiddon, 1984) attempted to compare the various

Discrimination of Brain-Damaged from
Functional Psychiatric and Medical Patients
with the MMPI

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Abstract

Twenty-one MMPI procedures for differentiating brain-damaged from functional psychiatric patients were compared for their effectiveness and relative utility across five groups of patients: brain-damaged, functional psychotic, nonpsychotic psychiatric, chronic pain and obesity. Further, localization of brain damage (left hemisphere, right hemisphere, or diffuse) was examined with respect to its effect on the efficacy of the 21 MMPI indices. MMPI Scale 8 cutting score indices yielded the highest hit rate for brain-damaged patients (73 to 75.6%). However, these indices, and several others, were criticized for making such classification solely on the basis of the lack of psychopathology rather than the presence of organicity content, limiting their clinical utility. Three indices emerged as most generalizable across psychiatric populations: the Hs-Pt Index (Watson, Plemel, & Jacobs, 1978), the P-O Scale (Watson & Plemel, 1978), and the Hovey Scale (Hovey, 1964). These indices significantly discriminated brain-damaged patients from functional psychiatric patients ($p < .001$) and yielded combined hit rate percentages as follows: Hs-Pt Index, 70.0%; P-O Scale, 70.7%; Hovey, 74.1%. Although the Hovey had the greatest combined hit rate with a low false positive rate of 13.3%, it was only able to correctly classify brain damage 48.8% of the time. The Hs-Pt Index yielded a brain damage detection rate of 70.0%, whereas the brain damage detection rate for the P-O Scale was 62.2%. No gender differences were found in the ability of these three indices to discriminate groups, and they appear to have clinical utility.

The hypothesis that locus of brain damage would influence the effectiveness of the MMPI organicity indices was not

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Table 2

Proportion of Correct Diagnosis: Gender by Index

	Discrepancy Index	Laterality Index
Male (N=43)	.65 ($p < .05$)	.67 ($p < .03$)
Female (N=22)	.68 (ns)	.64 (ns)

Discussion

In regard to our original hypothesis, successful cross-validation would be demonstrated if the LI discriminated left versus right hemispheric lesions in a heterogeneous sample of brain injured patients. In addition, the hit-rate with the LI would have to be significantly greater than other WAIS-based lateralizing indices (in this study the DI). The results of our work clearly indicate that the LI does achieve a degree of statistical significance in correctly lateralizing brain lesions. However, the hit rate of the LI is exactly the same as the DI. Researchers have criticized the low prediction rate of the DI (e.g., Kljajic and Benny, 1984; Todd, et al, 1977) as being clinically unreliable, and in comparison with the LI the same criticism must certainly hold true.

Our findings differ substantially from those of Lawson and Inglis. The differences in results may be accounted for in patient samplings. Lawford and Inglis used a homogeneous group of CVA patients. Our sample was heterogeneous consisting of patients with diagnosed seizures (N=20), closed head injuries (N=16), neoplasms (N=13), CVAs (N=8), penetrating head injuries (N=3), infections (N=2), and arteriovenous malformations (N=2). Additionally, our patient sample had clear medical diagnoses and lesion verification.

The sex differences noted in our results may be due to the relatively low number of females sampled. There is no indication that either the LI or the DI is a better predictor for one sex over the other. However, this is an area which warrants further investigation.

predicted group membership was compared to actual group membership, and percentages of hits or correct predictions were calculated. To facilitate evaluation of gender specific effects on these two measures, separate analyses were conducted for male and female subjects.

Results

Utilizing a statistical comparison of the standard error of the difference between two correlated percentages revealed that the DI and the LI correctly discriminated laterality of right hemispheric lesions at a level which exceeds chance ($p < .04$). See Table 1. However, neither the DI nor the LI exceeded the chance level of prediction for right hemispheric lesions. Both measures identified the same percentage (.66%) of correctly lateralized lesions. This indicates that the LI is no more effective in lateralizing lesions than the DI. Even though the .66% is a statistically significant hit rate ($p < .05$), it presents the clinician with a high and unacceptable error level, with approximately one out of three patients misidentified. While the DI and LI methods showed a statistically significant lateralization pattern for male subjects, both were non-significant for the female patients tested (see Table 2). However, this may reflect the relatively lower number of female subjects in our sample. Within the male sample, neither index significantly differed in its ability to correctly classify subjects. Within each of the indices, there were no significant effects for sex of the patient. Finally, neither the DI nor the LI discriminated left or right hemispheric lesions better than the other.

Table 1

Proportion of Correct Diagnosis: Index by Lateralization of Lesion

	Left Lesion	Right Lesion	Combined
Discrepancy Index	.57 (ns)	.73 ($p < .02$)	.66 ($p < .01$)
Laterality Index	.61 (ns)	.70 ($p < .04$)	.66 ($p < .01$)
	N=28	N=27	N=65

The purpose of the present study is to investigate the discriminant validity of Lawson and Inglis' Laterality Index on a heterogeneous group of brain damaged patients. Additionally, the discriminant validity of the Laterality Index will be compared to that of the Verbal minus Performance IQ discrepancy score.

Method

Subjects

Subjects were 65 right-handed patients with confirmed unilateral brain damage, who were referred for neuropsychological evaluation. All subjects had undergone extensive neurodiagnostic examination and as part of that evaluation, were given the complete Wechsler Adult Intelligence Scale. The subjects were 43 males (mean age=39.2 years) and 22 females (mean age=35.4 years). Neuropsychological assessments for these subjects were performed by either a neuropsychologist or a qualified technician under the supervision of a neuropsychologist. Criteria for inclusion in this study were: a) the presence of at least one definitive, positive neurodiagnostic test (e.g., EEG's positive for seizure disorders, CT-scans for neoplasms) and b) the absence of conflicting neurodiagnostic results. In many cases, the presence of the lesion was confirmed by several neurodiagnostic procedures, including neurosurgery.

Measures

Two measures were derived from the WAIS. The first of these was the Verbal minus Performance IQ discrepancy score. Negative discrepancy scores (i.e. relatively lower Verbal IQ's) were interpreted as predicting left-hemispheric dysfunction while positive discrepancy scores (i.e., relatively lower Performance IQ's) were interpreted as predicting right-hemispheric dysfunction. In the rare case (n=2) where the Verbal and Performance IQ's were equal, no prediction of lateralized dysfunction was made, and these cases were counted as prediction failures in subsequent analyses.

The second measure calculated was Lawson's and Inglis' Laterality Index. This index was calculated on the formula:

$$\text{Laterality Index} = \sum WX - 1.5 (\sum X)$$

where $\sum X$ equals the sum of the age connected WAIS subtest scores, and $\sum WX$ equals the sum of the factorially weighted WAIS age connected subtest scores. Positive laterality indices were interpreted as predicting left-hemispheric dysfunction. Conversely, negative laterality indices were interpreted as predicting right-hemispheric dysfunction. Percentage of correct predictions were compared for significance utilizing standard error (SE) of difference between percentages.

Procedures

To determine the discriminant validity of the Verbal minus Performance Discrepancy Index (DI) and the Laterality index (LI),

with Verbal vs Performance IQ splits as lateralizing indices is to factor analyze the relative contribution of each WAIS subtest score to a verbal versus visuospatial dimension. Recently, Lawson and Inglis (1983) advanced such a factor analytic solution. Using the second factor of an unrotated principal-components analysis of the WAIS, these authors were able to provide factor score coefficients with which the age-corrected subtest scores of the WAIS could be weighted. These weighted scores were then entered in a formula to provide an overall index of lateralized brain dysfunction.

Several interesting findings emerged from this study. An analysis of variance on laterality index scores for male and female unilateral stroke patients revealed a statistically significant effect for lateralization of the lesion. However, a more in depth, follow-up analysis revealed that the strong lateralization effect found in the male patients were not observed in their female counterparts. The authors interpreted this findings as supporting the hypothesis that cerebral functions in females are less strongly lateralized

The implications of these results for neuropsychological assessment are obvious and exciting. Such a WAIS-based Laterality Index would provide a powerful tool for clinicians, enabling them to localize cerebral dysfunction with a greater degree of certainty. Moreover, the derivation of a laterality index from an instrument already employed as part of standard neuropsychological test batteries means that increased assessment time is not required to obtain this additional measure.

However, as Lawson and Inglis carefully point out, the Laterality Index is only a research device whose clinical utility must be supported by cross-validation studies. For cross-validation to be successful, two phenomena must occur: a) the Laterality Index must be shown to successfully discriminate left-versus right-hemispheric lesions in a heterogeneous group of brain damaged patients, and b) the Laterality Index must discriminate patients with left-hemispheric versus right-hemispheric lesions at a rate significantly higher than might be obtained with other WAIS-based indices such as the mere discrepancy between Verbal and Performance IQ's.

In Lawson and Inglis' study, they validated the Laterality Index on a sample of eighty stroke victims. However, since their sample consisted only of CVA patients, questions arise regarding the generalizability of their results to the population of all brain damaged patients. In particular since most CVA's are restricted to a single cerebrovascular distribution, resulting in focal lesions which are generally accompanied by hard neurological signs (e.g. hemiparesis, aphasia), some questions exist as to the ability of the Laterality Index to discriminate more subtle unilateral lesions.

In addition, the factor loadings upon which the Laterality Index is based are highly correlated with Verbal minus Performance IQ discrepancy score ($r=.95$). Thus, there is some doubt as to whether or not the Laterality Index indeed offers a significant advantage over the use of the Verbal/Performance discrepancy score.

WAIS-Based Laterality Indices: Statistical Significance but Limited Clinical Utility

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Abstract

Much research has been devoted to examining the differential effects of unilateral brain damage on subscale scores of the Wechsler Adult Intelligence Scale (WAIS). Efforts to clinically employ the traditional Verbal versus Performance IQ splits have generally met with failure. Recently, Lawson and Inglis advanced a factor analytic alternative whereby factor score coefficients were developed for each WAIS subtest. These weighted scores were then entered into a formula to provide an overall index of lateralized brain dysfunction. This study reexamines the discriminant validity of Lawson and Inglis' Laterality Index in relation of that of the WAIS Verbal minus Performance Scale discrepancy score. Although both indices correctly lateralized brain dysfunction at a level exceeding chance, the error rates for both indices rendered them clinically unreliable. Additionally, neither index demonstrated clear-cut gender-specific effects in their ability to correctly lateralize brain dysfunction, in contrast to the results obtained by Lawson and Inglis. Readers are cautioned against overreliance when making diagnostic decisions with the Laterality Index in light of these findings.

Introduction

It is well established that lateralized lesions in the human brain result in different cognitive dysfunctions depending on involvement of the left or right cerebral hemisphere. Consequently, much research has been devoted to examining the differential effects of unilateral brain damage on subscale scores of the Wechsler Adult Intelligence Scale (WAIS); (Dennerll, 1964; Klove & Reitan, 1958; Parsons, Vega, & Burn, 1969; Reitan, 1955; Satz, 1966; Satz, Richard, & Daniels, 1967; Simpson & Vega, 1971; Todd, Coolidge, & Satz, 1977). In particular, it was hypothesized that left-hemispheric lesions would result in relatively depressed Verbal Scale scores while right-hemispheric lesions would result in relatively depressed Performance Scale scores. While many studies statistically confirmed this hypothesis, efforts to employ these findings clinically have generally met with failure (e.g., Todd et al, 1977).

It now seems apparent that neither the Verbal nor Performance scale of the WAIS are pure measures of either verbal or visuospatial abilities and therefore are not exact indicators of left versus right hemisphere dysfunction. One method of reducing the error associated

Table I

recording	<u>S</u> 's response
1	
4	5
6	10
3	9
8	11

Table II

percentile	seconds per correct response
90	1.65
75	1.95
50	2.45
25	3.18
10	3.48

Table III

est IQ	n	PASAT	SD	range
90-99	10	3.31	.53	2.58-4.15
100-109	29	3.19	.81	1.86-4.97
110-119	26	3.07	.66	1.98-5.00
120+	9	2.32	.20	2.00-2.71

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Discussion

The PASAT, developed and initially standardized by Gronwall (1977), has been shown to be sensitive to subtle cognitive dysfunction. It was initially thought that this test was not related to age or intelligence.

The results indicate that for a normal population there is no relationship between age and rate of information processing within the 18-49 year range. Intelligence was found to be significantly correlated with processing speed, subjects with higher estimated IQ's performing the task faster. Norms for each of four IQ ranges were developed.

Finally, the results indicated that Gronwall's cutoff of 3.45 seconds per correct response identified 26% of this sample as having impaired processing rates, though none of the subjects had any history of neurological or psychiatric involvement. The clinician may need to be aware of the potential false positives involved in using a cutoff approach, and instead compare percentile efficiency on this test with similar percentile rankings on other tests. It should also be emphasized that the relationships found in this study occurred in a normal sample. A neurological sample may or may not display the same relationships.

by averaging trials I - IV (any trial 0.6 seconds slower than any other trial was not used in this mean score, a recommendation made by Gronwall, 1977).

Results

The mean PASAT score for this normal sample was 3.07 seconds per correct response (sd .71). Percentile rankings for time can be seen in Table II.

Insert Table II about here

The average estimated IQ of the sample was 109 (sd 8.9, range 82-125). A linear regression between estimated IQ and PASAT time resulted in an R of $-.357$, R square of $.128$, $p .01$. This indicates that with increasing intelligence, speed of information processing also increases, and suggests the need to adjust for IQ when determining if a patient's PASAT time is impaired. Table III presents expected PASAT times for four IQ ranges (number of subjects below 90 IQ was insufficient to compute expected times).

Insert Table III about here

The average age of the sample was 28.34 (sd 6.74, range 18-49). A linear regression between age and PASAT time resulted in an R square of $.005$, showing no correlation with age within the 18-49 range.

Because administration of all four trials of this test requires approximately 20 minutes, scores for each trial were examined to determine if the mean score for the test could be accurately estimated by the results on one trial. The first trial was generally found to be the slowest (mean 4.095 sec., sd 1.53), probably due to the need for further practice before optimal speed is reached. The first trial is also presented at the slowest rate, and subjects able to process information faster are unable to demonstrate their proficiency. Performance on trial II (mean 3.407, sd 1.013, range 2.17 - 6.77) can be used to predict the over-all mean score by the following formula: mean PASAT score = $.640$ (trial II) + $.849$. Regression of trial II with over-all scores resulted in $R = .892$, R square = $.796$, SEE = $.360$. Hypothesizing a perfect relationship (1.0), $T(75) = -9.636$, $p .001$. While this relationship is a strong one, some information is lost, and the implications for using this estimate in a neurological population have yet to be determined.

great, or if the rate of function is inadequate." (Gronwall and Wrightson, 1974). This measure has been found to be correlated with subjective complaints (Gronwall, 1981), PTA (Gronwall and Wrightson, 1974), and ability to resume work activities (Gronwall, 1977). The test essentially measures the speed at which patients add single digit numbers.

The PASAT has been widely used, and yet several unresolved issues remain. First, there has been no independent cross-validation of the normative sample's performance on the test. Second, there has been no verification of Gronwall and Wrightson's statement (1981) that performance on the test is unrelated to intelligence; Kanter (1984) tentatively identified a correlation in a head-injured sample. Finally, although Gronwall believes performance on the PASAT is not age-related, she suggests that timed serial addition is not suitable for patients younger than 14 or older than 55. While this corresponds to the modal head injury patient who is between 17 and 25 (McLean et al., 1984), it leaves unanswered whether processing speed is age-related within this range. The current study addressed these three issues.

Method

Subjects. 76 subjects were selected from an active duty military population through arrangements with their supervisors or ward personnel in cases where they were non-neurological hospital patients. Participation was voluntary. 71% were male, 29% female. Mean age was 28.34 years (sd 6.7, range 18-49). A standard history was taken to insure that there was no neurological or psychiatric history. Subjects with any history of loss of consciousness or evidence of concussion were not included in the study. Mean educational level was 14 years (sd 2.7, range 12-20). Mean IQ estimated from the Shipley Institute of Living Scale (Shipley, 1940) was 109 (sd 8.9, range 82-125).

Procedure. After the history and Shipley, each subject was presented with a random series of single digit numbers on a tape recording. The subject was asked to add each number to the one preceding it. The second is added to the first, the third to the second, and so on (see Table 1).

Insert Table I about here

The subject was given an explanation and some examples on the tape recorder. The tape was then turned off and the subject was given more practice until it was clear that the task was understood and being performed adequately. The subject was then given four trials of 61 numbers each (numbers 1 to 9 used in the same random order in each trial). The numbers were presented at the rate of one number every 2.4, 2.0, 1.6, and 1.2 seconds for trials I - IV. The duration of each number was approximately 0.4 second. The number of correct responses was determined and this was expressed as the number of seconds required per correct response through the use of a conversion table. The mean number of seconds per correct response was determined for each subject

strategies developed across a single (males only) population. However, Graca et al (1984) established their own classification criterion for the MMPI organicity indices and scales. Thus, no research has simultaneously compared these indices as they were originally published across the same brain-damaged population toward investigating their relative effectiveness.

Secondly, these MPI OBS indicators and scales have been developed and validated on heterogeneous groups of brain-damaged patients, with no attempt made to control for type or location of lesion. A number of research studies have found differences in MMPI profiles based on location of brain lesions, (Anderson & Hanvik, 1950; Williams, 1952; Gainotti, 1972; Black, 1975; Gasparrini, Satz, & Heilman, 1978; Black & Black, 1982; etc.). Thus, as personality factors are influenced by the locus of brain injury, one would expect changes in the MMPI profile accordingly, and perhaps changes in brain damage discriminators' accuracy. Research examining the brain damage vs functional psychiatric indicators while controlling for location of brain damage would be informative and would possibly eliminate the variability reported by different investigators.

The present study proposed to cross-validate 21 MMPI organicity indicators and scales originally described in the literature, across the same brain-damaged population so as to investigate the following questions: (1) Do any of these OBS indicators reliably discriminate brain-damaged from functional psychiatric patients? and (2) What is the relative utility of these brain damage indicators? The effect of the locus of brain lesions was investigated by comparing left hemisphere, right hemisphere, and diffuse brain-damaged patients' hit rates across the organicity indicators and scales. Mean MMPI profiles were generated for each group and were compared for profile differences. The results were also examined for differences with respect to gender.

Method

Subjects

Five groups of subjects were included in the present investigation: 90 brain-damaged patients (66 male, 24 female, \bar{X} age 40.0); 60 psychotic non-brain-damaged psychiatric inpatients (24 male, 36 female, \bar{X} age 28.6); 60 nonpsychotic non-brain-damaged psychiatric inpatients (20 male, 40 female, \bar{X} age 31.2); and 60 chronic pain patients (23 male, 37 female, \bar{X} age 38.2); and 60 obesity patients who were candidates for gastric bypass surgery (8 male, 52 female, \bar{X} age 32.5). The brain-damaged group was composed of the following three subgroups consisting of 30 subjects each: primarily left hemisphere damage (24 males, 6 females); primarily right hemisphere damage (21 males, 9 females); and diffuse brain damage involving both cerebral hemispheres (21 males, 9 females).

Procedure

Each subject's psychological test data was reviewed and MMPI answer sheets were obtained. In the Brain Damage group 46 subjects had taken the group or long Form R of the MMPI, while 44 subjects had completed Form R-400.

In the Psychotic group there were 43 group or long Form R MMPIs, and 17 Form R-400. In the Nonpsychotic group there were 57 group or long Form R MMPIs and 3 Form R-400. All subjects in the Pain and Obesity groups had completed the group form of the MMPI.

Each subject's MMPI was examined or scored for each of the following MMPI organicity scales or indices:

- (1) 2-9/9-2 code-type cited in Lachar (1974)
- (2) 1-9/9-1 code-type cited in Lachar (1974)
- (3) 1-3-9 code-type (Gilberstadt and Duker, 1965)
- (4) Ayer's et al. (1975) Sc scale cutting score
- (5) Russell's (1977) Sc scale cutting score
- (6) Golden et al.'s (1979) F scale cutting score
- (7) Holland et al.'s (1975) psychotic triad cutting score
- (8) Watson, Plemel and Jacobs (1978) Hs-Pt Index
- (9) Watson and Thomas (1968) Rule 1
- (10) Watson and Thomas (1968) Rule 2
- (11) Watson and Thomas (1968) Rule 3
- (12) Watson and Thomas (1968) Rule 4
- (13) Russell's (1975) Key (short form)
- (14) Russell's (1975) Key (all rules applies)
- (15) Markowitz's (1973) OBS-Sc Signs
- (16) Hovey's (1964) 5-item organicity scale
- (17) Shaw and Matthew's (1965) Pseudo-neurologic scale
- (18) Watson (1971) Sc-0 scale, Weighted Long Form
- (19) Watson (1974) Sc-0 scale Unweighted Long Form
- (20) Watson (1971) Sc-0 scale, Weighted Short Form
- (21) Watson and Plemel's (1978) P-0 scale

Results

Analysis of the MMPI Organicity Indices

The percentage of subjects scoring in the organic range on each of the 21 indices or scales was determined for each group. Chi Square tests were utilized to compare the organicity hit rate of each scale or index for each diagnostic group to the Brain Damage group. Table 1 presents the percentage of subjects classified as brain-damaged by each index or scale, and the χ^2 results for each comparison. As can be seen in Table 13, numerous significant differences were found, particularly among the comparisons between the Brain Damage group and the Psychotic and the Nonpsychotic groups. The Brain Damage group had significantly more subjects classified as brain-damaged than the Psychotic and the Nonpsychotic groups on the following indices and scales: Ayer's et al. (1975) Sc Cutting Score, Russell's (1977) Sc Cutting Score, Golden et al. (1979) F scale Cutting Score, Psychotic Triad Cutting Score, Hs-Pt Index, the Hovey Scale, Sc-0 Scale. Significant differences also emerged between the Brain Damage group and the Psychotic group on Watson and Thomas's (1968) Rule 2, Russell's (1975) Key short form and with all rules applied, and for Markowitz's (1973) OBS Signs. In almost all comparisons where significant differences emerged between the brain Damage group and the Pain or Obesity group, it was due to a greater percentage of subjects being classified as brain-damaged in

medical groups than in the Brain Damage group. In those cases, the organicity index appears to discriminate Brain Damage from functional groups on the basis of degree of psychopathology or schizophrenic content, with lower values indicating Brain Damage. For three organicity scales (the Hovey, the Sc-0 Weighted Long Form, and the Sc-0 Unweighted Long Form), the Obesity group organicity hit rate was found to be significantly lower than that of the Brain Damage group. Also of note is that there were no 2-9/9-2, 1-9/9-1, or 1-3-9 profiles in the Brain Damage group. There was one occurrence of the 1-9/9-1 profile in the Psychotic group and two in the Pain group. The 1-3-9 profile occurred three times in the Pain group and once in the Obesity group.

The organicity hit rate percentages for each scale or index were also determined for each of the three Brain Damage subgroups. Comparisons between the Diffuse and Right Hemisphere groups, Diffuse and Left Hemisphere groups, the Right and Left Hemisphere groups were made. The organicity scales and indices hit-rate percentages for these subgroups, and the results of the χ^2 for each comparison are presented in Table 2. As can be seen in Table 2, only three comparisons were found to be significant, indicating little difference in ability of the organicity indices and scales in achieving "hits" dependent upon locus/type of Brain Damage. Those comparisons which were found to be significant were the two Sc cutting scores, Ayer's et al. (1975) and Russell's (1977), in which the Right Hemisphere subgroup achieved greater hit rates than the Left Hemisphere subgroup, and the Watson and Thomas (1968) Rule 4 for which the Left subgroup achieved a significantly greater hit rate than the Diffuse subgroup.

The 21 organicity indices hit rate percentages were also determined separately for the males and females of the Brain Damage group and were compared for significant differences using χ^2 tests. These results are presented in Table 3. Females achieved greater hit rates than males, with Russell's (1977) Sc cutting score, the Psychotic Triad cutting score, Watson and Thomas's (1968) Rule 2, and with Markowitz's (1973) OBS signs. Males achieved significantly greater hit rates than females on Watson and Thomas's (1968) Rules 1, 3 and 4. Overall, for the majority of organicity indices and scales there were not significant differences in hit rates based on gender.

In addition to comparisons of the hit rate percentages determined by the cut-off scores in the literature, the mean scale scores obtained by each group for the organicity scales (scales 16 through 21 in the Method section) were compared using one-way analysis of variance tests. These analyses were performed so as to determine if the different groups' organicity scale mean scores were significantly different. As the Psychotic and Brain Damage groups contained a number of subjects who took form R-400 of the MMPI (17 and 44 subjects, respectively), the analyses for the P-0 scale and the three Sc-0 scales were conducted separately for the group/long form R and the short form R-400 of the MMPI. The organicity scale mean scores and results for the group comparisons are presented in Table 4. In examining the mean organicity scale scores generated by each group, when significant hit rate percentages were achieved by the scale, except for the Hovey, the cut-off scores published in the literature were generally accurate. The Hovey scale Brain Damage group mean score is lower than the published cut-off, accounting for its lower hit rate, although, it also

demonstrated the lowest false positive rate of any of the organicity scales or indices.

Mean organicity scale scores were also determined, and comparisons made across the three Brain Damage subgroups (see Table 5). There were no significant differences in mean organicity scale scores between the three Brain Damage subgroups.

Lastly, mean organicity scale scores were determined separately for the males and females of the Brain Damage group and comparisons also made between them for each scale (see Table 6). The only significant difference to emerge was found on the P-0 scale, MMPI form R-400.

Profile Characteristics

Mean MMPI profiles were generated for each subject group. Table 7 presents the mean scale T scores and ANOVA results of comparisons of the Brain Damage group mean scale scores and each of the other subject group mean scale scores. In general, the Psychotic and Nonpsychotic groups' mean profiles evidenced more psychopathology than the Brain Damage group, whereas the two medical groups, Pain and Obesity, demonstrated less overall elevation or psychopathology.

Mean MMPI profiles were also generated for each of the Brain Damage subgroups: Diffuse, Primarily Right Hemisphere, and Primarily Left Hemisphere brain damage. Table 8 presents the mean scale T scores and ANOVA results comparing these 3 subgroups. The basic configuration of the three subgroup's scale elevations being slightly more elevated than that of the Right Hemisphere subgroup.

Mean MMPI profiles were also generated separately for males and females within the Brain Damage group. Table 9 presents these mean scale T scores and the ANOVA results. The mean male Brain Damage profile had significant elevations on scales 2, 5, 7, and 8 when compared to the mean female Brain Damage profile. In fact the mean female MMPI profile is entirely within the normal range whereas the male profile has peaks ($T > 70$) on three clinical scales suggesting greater psychopathology.

A step-wise discriminant analysis procedure was performed with the Brain Damage group and each subject group, with all MMPI validity and clinical scales, except scale 5, as possible discriminating variables. The resulting standardized and unstandardized discriminant function coefficients, discriminant function group means, group classification function coefficients, and correct group classification hit rates generated by each classification function are presented in Tables 10-13. The results of the discriminant analyses between the Brain Damage group and the other subject groups reveal good ability to predict group membership at approximately an 81 percent hit rate. The greatest separation of groups by the procedure is achieved with the Psychotic and the Brain Damage group, and the least between the two new psychiatric medical groups, Chronic Pain and Obesity, and the Brain Damage group.

Step-wise discriminant analysis procedures were also performed with the subgroups of the Brain Damage population, generating discriminant

functions for the Diffuse and Right Hemisphere, Diffuse and Left Hemisphere, and the Right and Left Hemisphere subgroups. The resulting standardized and unstandardized discriminant function coefficients, discriminant function group means, group classification function coefficients, and the correct group classification hit rates generated by each classification function are presented in Tables 14-16. Overall, the results of the discriminant analyses with the three Brain Damage subgroups revealed some ability to separate or correctly predict membership into the Diffuse vs. Right Hemisphere subgroups and the Right vs. Left Hemisphere subgroups; however, when discriminating between the Left Hemisphere and Diffuse subgroups the results are near chance, indicating considerable overlap between these subgroups.

Discussion

The present study was designed to cross-validate all of the MMPI organicity indicators and scales currently in the literature across the same brain-damaged group in order to answer the following questions: (1) Do any of these organicity indicators reliably discriminate brain-damaged from functional psychiatric patients? and (2) What is the relative utility of these organicity indicators? Further, the locus of brain impairment was also investigated as to its effect on the utility of these MMPI organicity indicators.

In addressing the above questions, several interesting points emerged. Similar to the findings of Russell (1977) and others, the present study failed to find the 1-9/9-1, 2-9/9-2, or 1-3-9 code-types to be associated with brain damage. In fact none of these code-types occurred once across the 90 brain impaired subjects. Also, only 18.9 percent of the Brain Damage group subjects had peaks on MMPI scales 4 or 9, contrary to the suggestion of Watson and Thomas (1968). It does not appear that there is a "typical" brain damage profile nor that clinicians can rely on the folklore of the 1-9/9-1, 2-9/9-2, or 1-3-9 profiles indicating brain impairment.

The present study revealed that several organicity indices did not discriminate groups of subjects, such as the Pseudoneurologic scale, Watson and Thomas's (1968) Rules, and the Sc-0 Scale Weighted Short Form. In examining the ability of the remaining organicity indicators to reliably discriminate brain damage from psychiatric patients, many were able to do so from a statistical standpoint, yet their clinical utility is questionable. As the purpose of these MMPI organicity indices is to serve as screening instruments for some suspected neurological impairment, which can then be further evaluated, it would seem most desirable to maximize the detection of brain dysfunction at the expense of somewhat high false positive rates. Moreover, it appears that for a scale or index to be able to generalize across various psychiatric populations, rather than just a psychotic or very psychopathological patient group, it would be best to discriminate the brain damaged group on the basis of characteristics typical or unique to brain impairment, instead of the absence of a particular degree of psychopathology.

The nonpsychiatric medical groups, Pain and Obesity, obviously do not fall into the classification of either brain-impaired or functional; however, they are useful in revealing those indices or scales which are

most generalizable across patient groups, and those that discriminate primarily on the basis of degree of psychopathology.

In the present investigation, those indices which had the best organicity hit rates were: Russell's (1977) Sc cutting score (75.6%), Ayer's et al. (1977) Sc Cutting Score (73.0%), Psychotic Triad cutting score (72.2%), Hs-Pt index (70.0%), and the Sc-0 Scale, Unweighted Long Form (70.0%). The three cutting scores discriminate solely on the basis of degree of MMPI scale elevation (scale 8 or for the Psychotic Triad an average of scales 6, 7, and 8), with greater elevation indicating functional illness and lower elevation indicating brain damage. Similarly, the Sc-0 Scale has been criticized by Ayers et al. (1975), Holland et al. (1975), and others for measuring primarily the presence or absence of schizophrenic content rather than organicity content. These indices listed above would apparently be the best MMPI indicators of brain damage, given that it was already known that the diagnosis was either psychotic illness or brain dysfunction. However, the usefulness of these indices as screening instruments is diminished in a situation where the diagnosis is in question. Thus, although these organicity indices are able to differentiate schizophrenic or non-brain-damaged psychotic patients from brain-damaged patients at an overall hit rate of approximately 70 percent, their general clinical utility appears to be problematic.

Russell's (1975) Key, both the short form and with all rules applied, had an organicity hit rate of 65.6% (short form) and 68.9% (all rules), and discriminated groups on the basis of the relationship and the degree of scale elevations. However, false positives in the Nonpsychotic group were very high, similar to the findings of Trifiletti (1982), and organicity hit rates on the Obesity and Pain groups were greater than even those of the Brain Damage group. Thus, it appears that Russell's Key discriminates largely on the basis of degree of severity of psychopathology. The Hs-Pt Index which was able to discriminate between brain-damaged subjects and functional groups at an overall hit rate of approximately 70% also does so on the basis of the relationship of MMPI scale elevations. It performed relatively well with both psychiatric groups, having a false positive rate of approximately 30.0 percent. Again the Pain group had an even higher organicity hit rate than the Brain Damage group. However, this appears due to the high frequency of elevated MMPI scale 1 scores typical of the Pain group. Although the organicity hit rate with the P-0 scale was found to only be 62.6 percent, it had a relatively low false positive rate of 25 percent in both psychiatric groups, giving it an overall hit rate of approximately 70 percent. The Pain and Obesity groups were not significantly different than the Brain Damage group, suggesting that the P-0 scale is not discriminating on brain impairment characteristics alone. However, since both functional psychiatric groups had good classification rates, the P-0 scale may have some generalizability in psychiatric groups. It should be noted that although there were not Brain Damage group hit rate differences based on sex for the P-0 scale, female subjects did have a significantly higher mean P-0 scale score (more in the organic direction) than males. Lastly, the Hovey scale had the lowest false positive rates of any of the organicity scales or indices for both functional psychiatric groups, 13.3 percent. It also had a very low organicity hit rate in the Obesity group and discriminated groups on the basis of organicity content

rather than psychopathology, making it generalizable across psychiatric populations. Unfortunately, the Hovey had a very low hit-rate of 48.8 percent for the brain Damage group. These results replicate the findings of Upper and Seeman (1968) and others who found the Hovey to make few false positives, but to have a low hit rate.

Overall, in addressing the question of the relative utility of the organicity indices and scales in this study, none of the indices were found to have a high brain damage detection rate and also discriminate groups primarily on the basis of organicity content. This shortcoming makes the general clinical usefulness of any of them somewhat less than desirable. It should also be kept in mind that in this study an artificial base rate of 50% was assumed for presence or absence of brain damage, which is very different than the probability of occurrence in the real world. Thus, one may find the organicity indices to be less effective in clinical settings.

In the present investigation, the Hs-Pt Index, P-O scale and the Hovey appear to be most generalizable across psychiatric populations. Of these three, the Hs-Pt Index has the highest hit rate for the Brain Damage group, but it also has the highest false positive rate. The Hovey may be useful from the standpoint that it is only five items long, is based on organicity content, and it is unlikely to give false positive results. Also in their favor, hit rate sex differences were not found for any of these three indices.

Mean MMPI profiles were generated for each group in the present study. It was found that, in general, the two functional psychiatric groups' profiles were more pathological than the Brain Damage group profile, which, in turn, had more scale elevations than the two medical groups. In terms of overall classification hit rate, discriminant analysis procedures yielded a percentage of approximately 80.0, which is better than the results obtained by the organicity indices. Future research directed toward cross-validating the derived discriminant classification formulas would be helpful in determining their usefulness.

The present study also investigated the locus of brain impairment, left hemisphere, right hemisphere, or diffuse, as to its effect upon the hit rates of the various organicity indices. Interestingly, although the Left Hemisphere Brain Damage subgroup's mean MMPI profile was significantly elevated on MMPI scales L and F compared to the Right subgroup, and on scale 9 when compared to the Diffuse subgroup, there was very little evidence to support the hypothesis that locus of impairment influenced the effectiveness of the organicity scales and indices. The mean profiles generated by each Brain Damage subgroup were quite similar in overall configuration, except for the few significant elevations in the Left Hemisphere subgroup was found to have the greatest MMPI profile elevations tends to support the findings of other investigators, such as Gasparrini et al. (1978). However, the differences found in the current investigation are not so extreme or definitive as those generally suggested in the literature.

In the present study, differences between male and female Brain Damage group subjects were also examined. The mean MMPI profile generated for the male group had significant elevations on scales 2, 3, 7, and 8.

as compared to the mean female profile. This difference in overall level of pathology on the MMPI effected the organicity hit rate on some indices that discriminate largely on the basis of the degree of psychopathology. The results of the present study are similar to those found by Carpenter and LeLieuvre (1981), who found very high organicity hit rates (93%) with females when using Russell's (1977) Sc cutting score. In fact, a 91.7% hit rate was observed in this study. Although the above differences with respect to gender were found, the majority of the organicity indicators were included in the analyses of the Brain Damage group. Furthermore, as the purpose of these organicity indicators is to screen for possible brain impairment, it is desirable that they be broadly effective, across both sexes as well as with a variety of psychiatric patients. The fact that the mean male Brain Damage MMPI profile is somewhat more elevated than that of the females' may reflect differences in coping styles, or perhaps is related to the causes and effects of brain dysfunction in males. Males have a higher incidence of brain damage caused by traumatic injury than females, perhaps effecting their ability to adjust to the changes in cognitive functioning. Also, traumatic injury results in sudden change, as opposed to a more gradual change characteristic of many degenerative or neoplastic processes. Another possible hypothesis would be that males may more frequently be in the position of having job and lifestyle changes due to their impairment, whereas traditionally females would have less disruption of their daily routine if they were homemakers. With more women working out of the home, this possible explanation would have decreasing influence on the observed differences with respect to gender.

In summary, the purpose of the present investigation was to cross-validate 21 published MMPI procedures for differentiating brain damage from other psychiatric groups across the same populations in order to examine their clinical utility and relative merit. The 21 MMPI procedures were compared using five groups: brain-damaged patients, non-brain-damaged psychotic and nonpsychotic psychiatric inpatients, chronic pain patients and obesity patients. Localization of brain damage (left hemisphere, right hemisphere, or diffuse), was examined with respect to its effect on the efficacy of the 21 MMPI organicity indices. It was found that MMPI Scale 8 (Schizophrenia) cutting score indices yielded the highest hit rates for brain-damaged patients (73 to 75.6%). However, these indices, and several others, are criticized for making such classification solely on the basis of the lack of psychopathology rather than the presence of organicity content, limiting their utility in clinical situations where diagnosis is unknown or not limited to the dichotomous choice of schizophrenic/psychotic or brain-damaged. In the present study, three indices emerged as most generalizable across psychiatric populations: the Hs-Pt Index (Watson, Plemel, and Jacobs, 1978), the P-O Scale (Watson and Plemel, 1978), and the Hovey Scale (Hovey, 1964). These indices significantly discriminated brain damaged patients from functional psychiatric patients ($p < .001$) and yielded combined hit rate percentages as follows: Hs-Pt Index, 70.0%; P-O Scale, 70.7%; Hovey, 74.1%. Although the Hovey has the greatest combined hit rate, it was only able to correctly classify brain damage 48.8% of the time, and yet had a favorable false positive rate of 70.0%, whereas the brain damage detection rate for the P-O Scale was 62.2%. In addition, no sex differences were found in the ability of these three indices to discriminate groups, increasing their general clinical

utility in the differentiation of brain damage from functional psychiatric illnesses.

In the present study, the hypothesis that locus of brain damage would significantly influence the effectiveness of the MMPI organicity indices was not supported, and only a few MMPI profile differences were found dependent upon locus of impairment. Sex differences were found within the brain damage group when comparisons of mean MMPI profiles were made. The male brain damage group had significant elevations on scales 2 (Depression), 5 (Masculinity-femininity), 7 (Psychasthenia), and 8 (Schizophrenia) as compared to the mean female profile, and further research is recommended toward investigating these differences. Also, in the present study discriminant function classification formulas were derived which predicted group membership at approximately an 80% hit rate, which is greater than the hit rates achieved by the organicity indices. Future research cross-validating these classification formulas is necessary to document their clinical usefulness.

Table 1

Percentage of Subjects Classified as Brain-Damaged
by MMPI Organicity Indices

<u>Organicity Scale or Index</u>	<u>Groups</u>				
	<u>Brain Damage</u> N = 90	<u>Psychotic</u> N = 60	<u>Nonpsychotic</u> N = 60	<u>Pain</u> N = 60	<u>Obesity</u> N = 60
(1) 2-9/9-2	0.0	0.0	0.0	0.0	0.0
(2) 1-9/9-1 $\chi^2(1, N=150)=$	0.0	1.7 2.06	0.0	3.3 3.08	0.0
(3) 1-3-9 $\chi^2(1, N=150)=$	0.0	0.0	0.0	5.0 4.46*	1.7 2.06
(4) Ayer's et al. Sc Cutting Score $\chi^2(1, N=150)=$	73.0	30.0 27.42****	48.0 9.66**	93.0 9.70**	81.7 1.49
(5) Russell's Sc Cutting Score $\chi^2(1, N=150)=$	75.6	43.3 15.94****	55.0 6.88**	95.0 10.04**	90.0 5.11*
(6) Golden's et al. F Cutting Score $\chi^2(1, N=150)=$	53.3	15.0 22.56****	31.7 6.88**	67.0 3.41	62.0 1.06
(7) Psychotic Triad Cutting Score $\chi^2(1, N=150)=$	72.2	33.3 22.16****	48.3 8.76**	91.7 8.70**	86.7 4.51*

Table 1 (continued)

<u>Organicity Scale or Index</u>	<u>Brain Damage</u>	<u>Groups</u>			
		<u>Psychotic</u>	<u>Nonpsychotic</u>	<u>Pain</u>	<u>Obesity</u>
(8) Hs-Pt Index $\chi^2 (1, N=150)=$	70.0	28.3 25.12****	31.7 21.35****	91.7 10.26**	61.7 1.13
(9) Watson & Thomas Rule 1 .2 (2, $N=150$)= ^a	18.9	23.3 0.54	31.7 4.24	13.3 11.02**	43.3 11.25**
(10) Watson & Thomas Rule 2 $\chi^2 (1, N=150)=$	68.9	50.0 5.41	68.3 0.04	88.3 7.76**	93.3 13.02***
(11) Watson & Thomas Rule 3 $\chi^2 (1, N=150)=$	47.8	41.7 0.58	55.0 0.78	70.0 7.29**	75.0 11.07**
(12) Watson & Thomas Rule 4 $\chi^2 (1, N=150)=$	37.8	35.0 0.16	36.7 0.05	38.3 0.03	35.0 0.16
(13) Russell's Key Short Form $\chi^2 (2, N=150)=$ ^a	65.6	25.0 24.18***	48.3 5.01	81.7 8.18*	76.7 6.01*
(14) Russell's Key All Rules $\chi^2 (1, N=150)=$	68.9	38.3 13.68***	55.0 2.99	93.3 13.03***	81.7 3.15

Table 1 (continued)

Organicity Scale or Index	Brain Damage	Groups			
		Psychotic	Nonpsychotic	Pain	Obesity
(15) Markowitz's Signs $\chi^2 (2, N=150)=b$	44.4	21.7 9.28**	35.0 4.77	83.3 22.70***	66.7 0.15
(16) Hovey $\chi^2 (1, N=150)=$	48.8	13.3 20.22***	13.3 20.22***	36.7 2.22	16.6 16.33***
(17) Pseudoneurologic $\chi^2 (1, N=150)=$	50.0	45.0 0.39	36.7 2.63	35.0 3.33	48.3 0.07
(18) Sc-0 Wt Long Form $\chi^2 (1, N=150)=$	60.0	20.0 23.44****	41.7 4.87*	60.0 0.03	38.3 6.79**
(19) Sc-0 Unwt Long Form $\chi^2 (1, N=150)=$	70.0	21.7 33.67****	45.0 9.36**	66.7 0.21	41.7 11.91***
(20) Sc-0 Wt Short Form $\chi^2 (1, N=150)=$	50.0	35.0 3.33	41.7 1.04	46.7 0.19	40.0 1.48

Table 1 (continued)

Organicity Scale or Index	Groups			
	Brain Damage	Psychotic	Nonpsychotic	Pain
(21) P-0 Scale	62.2	25.0	25.0	73.3
$\chi^2 (1, N=150) =$		20.05***	20.05***	2.06
$*p < .05$	$**p < .01$	$***p < .001$	$****p < .0001$	

^aResults based on classification into three categories (organic, schizophrenic or unable to be diagnosed) and thus a 2 x 3 χ^2 test was performed for each comparison.

^bResults based on classification into three categories (organic, schizophrenic or invalid) and thus a 2 x 3 χ^2 test was performed for each comparison.

Table 2

Organicity Classification Hit Rate Percentages:
Brain Damage Subgroups

Groups	Organicity Scale or Index										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	2-9/9-2	1-9/9-1	1-3-9	Ayer's Et. Al. Sc Cutting Score	Russell's Sc Cutting Score	Golden's et. al. Cutting Score	Psychotic Triad Cutting Score	Hs-Pt Index	Watson & Thomas Rule 1	Watson & Thomas Rule 2	Watson & Thomas Rule 3
Diffuse	0.0	0.0	0.0	70.0	73.3	50.0	73.3	76.7	13.3	63.3	40.0
Right Hemisphere	0.0	0.0	0.0	86.7	90.0	66.7	76.7	76.7	20.0	80.0	53.3
Left Hemisphere	0.0	0.0	0.0	63.3	63.3	43.3	66.7	56.7	23.3	63.3	50.0

 χ^2 Test Results

Comparison	$\chi^2(1, N=60) =$										
Diffuse/Right	-	-	-	0.38	2.89	1.78	0.19	0.09	0.80 ^a	2.13	1.14
Diffuse/Left	-	-	-	2.55	0.77	0.33	0.40	2.78	1.25 ^a	0.07	0.67
Right/Left	-	-	-	4.44*	6.06	3.37	0.82	2.78	1.16 ^a	2.13	0.13

Table 15

Results of Discriminant Analysis: Diffuse and
Left Hemisphere Brain Damage Subgroups

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale 9	1.00000	Scale 9	0.08314
		(constant)	-5.12129

igenvalue = 0.07020 Canonical Correlation = 0.25611 Wilk's Lambda = 0.93441

Discriminant Function Group Means
(Group Centroids)

Diffuse Group = -0.26050 Left Hemisphere Group = 0.26050

Classification Function Coefficients

Diffuse Group		Left Hemisphere Group	
Scale 9	0.40412	Scale 9	0.44743
(constant)	-12.50679	(constant)	-15.17496

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Diffuse	Left Hemisphere
Diffuse	90	60.0%	40.0%
Left Hemisphere	60	46.7%	53.3%

Table 14

Results of Discriminant Analysis: Diffuse and
Right Hemisphere Brain Damage Subgroups

Standardized Canonical
Discriminant Function
Coefficients

Scale L 0.90223
Scale F 0.67887
Scale K -0.43898
Scale 9 -0.43813

Unstandardized Canonical
Discriminant Function
Coefficients

Scale L 0.11734
Scale F 0.07420
Scale K -0.04007
Scale 9 -0.04150
(constant) -5.85901

Eigenvalue = 0.18660

Canonical Correlation
= 0.39656

Wilk's Lambda = 0.84274

Discriminant Function Group Means
(Group Centroids)

Diffuse Group = 0.42471

Right Hemisphere Group = -0.42471

Classification Function Coefficients

Diffuse Group

Scale L 0.80880
Scale F 0.85206
Scale K 0.51585
Scale 9 0.48041
(constant) -76.36681

Right Hemisphere Group

Scale L 0.70912
Scale F 0.78904
Scale K 0.54988
Scale 9 0.51567
(constant) -71.39003

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Diffuse	Right Hemisphere
Diffuse	90	66.7%	33.3%
Right Hemisphere	60	33.3%	66.7%

Total of "grouped" cases correctly classified: 66.67%

Table 13

Results of Discriminant Analysis:
Brain Damage and Obesity Groups

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale 2	-0.44304	Scale 2	-0.05418
Scale 4	0.43419	Scale 4	0.05310
Scale 8	-0.47354	Scale 8	-0.05791
Scale 0	0.60689	Scale 0	0.07422
		(constant)	-0.19141

Eigenvalue = 0.49372 Canonical Correlation Wilk's Lambda = 0.66947
= 0.57492

Discriminant Function Group Means
(Group Centroids)

Brain Damage Group = -0.56988 Obesity Group = 0.85481

Classification Function Coefficients

Brain Damage Group		Obesity Group	
Scale 2	0.14367	Scale 2	0.06648
Scale 4	0.28480	Scale 4	0.36045
Scale 8	-0.00237	Scale 8	-0.08487
Scale 0	0.40484	Scale 0	0.51058
(constant)	-26.62164	(constant)	-27.09731

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Brain Damage	Obesity
Brain Damage	90	74.4%	25.6%
Obesity	60	13.3%	86.7%

Total of "grouped" cases correctly classified: 79.30%

Table 12

Results of Discriminant Analysis: Brain
Damage and Chronic Pain Group.

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale L	0.28732	Scale L	0.03594
Scale K	0.51262	Scale K	0.05470
Scale 1	-0.60019	Scale 1	-0.04204
Scale 2	0.72830	Scale 2	0.05359
Scale 3	-0.42097	Scale 3	-0.03604
Scale 4	-0.21782	Scale 4	-0.01801
Scale 8	0.96429	Scale 8	0.06843
		(constant)	-6.41002

Eigenvalue = 0.50139 Canonical Correlation = 0.57788 Wilk's Lambda = 0.66605

Discriminant Function Group Means
(Group Centroids)

Brain Damage Group = 0.57428 Chronic Pain Group = -0.86143

Classification Function Coefficients

Brain Damage Group		Chronic Pain Group	
Scale L	0.75073	Scale L	0.69912
Scale K	0.65436	Scale K	0.57582
Scale 1	-0.13088	Scale 1	-0.07052
Scale 2	0.44279	Scale 2	0.36584
Scale 3	-0.04482	Scale 3	0.00692
Scale 4	0.25416	Scale 4	0.28002
Scale 8	0.25087	Scale 8	0.152620
(constant)	-65.10054	(constant)	-56.10374

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Brain Damage	Chronic Pain
Brain Damage	90	77.0%	22.2%
Chronic Pain	60	16.7%	83.3%

Total of "grouped" cases correctly classified: 80.00%

Table 11

Results of Discriminant Analysis: Brain Damage
and Nonpsychotic Inpatient Groups

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale 1	-0.68342	Scale 1	-0.04567
Scale 4	0.63030	Scale 4	0.05106
Scale 6	0.84689	Scale 6	0.07584
Scale 7	-0.53246	Scale 7	0.03891
Scale 8	-0.84508	Scale 8	-0.04982
		(constant)	-4.25815

Eigenvalue = 0.59912 Canonical Correlation = 0.61209 Wilk's Lambda = 0.62534

Discriminant Function Group Means
(Group Centroids)

Brain Damage Group = -0.62776 Nonpsychotic Group = 0.94164

Classification Function Coefficients

Brain Damage Group		Nonpsychotic Group	
Scale 1	0.17348	Scale 1	0.10180
Scale 4	0.27997	Scale 4	0.36010
Scale 6	0.42511	Scale 6	0.54413
Scale 7	0.26271	Scale 7	0.32377
Scale 8	-0.30509	Scale 8	0.38327
(constant)	-26.48751	(constant)	-33.41658

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Brain Damage	Nonpsychotic
Brain Damage	90	83.3%	16.7%
Nonpsychotic	60	21.7%	78.3%

Total of "grouped" cases correctly classified: 81.33%

Table 10

Results of Discriminant Analysis: Brain
Damage and Psychotic Inpatient Groups

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale 1	-0.61110	Scale 1	-0.04337
Scale 2	-0.44448	Scale 2	-0.02912
Scale 4	0.34612	Scale 4	0.02835
Scale 6	0.69286	Scale 6	0.05460
Scale 7	0.30647	Scale 7	0.02316
		(constant)	-2.17321

Eigenvalue = 0.69606 Canonical Correlation = 0.64062 Wilk's Lambda = 0.58960

Discriminant Function Group Means
(Group Centroids)

Brain Damage Group = -0.67665

Psychotic Group = 1.01498

Classification Function Coefficients

Brain Damage Group		Psychotic Group	
Scale 1	0.19095	Scale 1	0.11758
Scale 2	0.12243	Scale 2	0.07317
Scale 4	0.22310	Scale 4	0.27105
Scale 6	0.20633	Scale 6	0.29870
Scale 7	-0.03834	Scale 7	0.00084
(constant)	-24.05132	(constant)	-28.01373

Classification Results

Actual Group Membership	N	Predicted Group Membership	
		Brain Damage	Psychotic
Brain Damage	90	82.2%	17.8%
Psychotic	60	20.0%	80.0%

Total of "grouped" cases correctly classified: 81.33%

**MMPI Mean Scale Scores: Brain Damage
Group by Gender**

$^{\dagger}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Table 8

MMPI Mean Scale Scores
Brain Damage Subgroups: Diffuse, Right Hemisphere, and Left Hemisphere

Groups	MMPI Scales												
	L	F	K	1	2	3	4	5	6	7	8	9	0
Diffuse (N = 30)													
Mean	54.03	60.90	53.63	73.20	74.33	69.03	64.70	53.73	60.10	67.07	72.03	58.47	58.00
SD	9.23	9.06	10.67	15.63	15.70	14.29	14.64	8.34	10.36	14.75	17.54	10.88	10.99
Right Hemisphere (N = 30)													
Mean	50.07	57.03	54.43	71.40	71.20	70.43	64.67	59.40	58.30	65.93	68.53	60.03	56.43
SD	5.75	9.24	11.23	14.82	14.27	10.16	11.92	10.49	8.50	11.45	12.63	10.23	10.70
Left Hemisphere (N = 30)													
Mean	55.13	64.73	52.13	68.67	70.23	67.60	64.87	57.03	62.60	67.07	76.13	64.73	57.90
SD	7.99	15.55	10.36	15.43	15.36	12.55	10.40	7.48	13.23	12.56	17.37	13.08	9.69

Comparison of Brain Damage Subgroup Mean Scores: ANOVA Results

Diffuse and Right Hemisphere F(1,58) =	3.99	2.68	0.08	0.21	0.65	0.19	0.00	5.37*	0.54	0.11	0.79	0.33	0.34
Diffuse and Left Hemisphere F(1,58) =	0.24	1.36	0.31	1.28	1.05	0.17	0.00	2.60	0.66	0.00	0.83	4.07*	0.00
Right and Left Hemisphere F(1,58) =	7.95***	5.44*	0.68	0.49	0.06	0.92	0.00	1.01	2.24	0.13	3.76	2.40	0.31

* $p < .05$ ** $p < .01$ *** $p < .001$

MMPI Mean Scale Scores: Comparisons of Group Means to Brain Damage Population

Groups		HAPI Scales												
		L	F	K	1	2	3	4	5	6	7	8	9	0
Brain Damage (N = 90)														
	Mean	53.08	60.89	53.40	71.09	71.92	69.02	64.74	56.72	60.33	66.69	72.23	61.08	57.44
	SD	8.01	11.97	10.68	15.24	15.05	12.36	12.31	9.07	10.89	12.85	16.14	11.64	10.05
Psychotic (N = 60)														
	Mean	51.10	74.03	48.97	62.55	66.52	62.27	72.95	58.27	75.62	70.87	83.08	71.70	59.73
	SD	8.35	15.76	10.78	12.15	15.57	10.89	12.07	10.98	15.00	13.78	15.47	13.11	11.24
F(1,148) =		2.12	36.72	6.16	13.22	4.52	11.81	16.26	0.88	52.22	3.59	16.82	27.07	1.70
Nonpsychotic (N = 60)														
	Mean	49.32	67.35	49.20	63.78	70.90	67.33	75.05	56.43	70.05	71.45	76.50	65.00	60.48
	SD	8.08	13.36	8.94	14.54	17.56	12.54	12.40	13.04	11.57	14.85	18.14	13.28	12.89
F(1,148) =		7.89	9.55	6.32	8.58	0.15	0.66	25.09	0.03	27.25	4.36	2.28	3.65	2.62
Chronic Pain (N = 60)														
	Mean	50.85	56.02	52.30	71.50	63.60	70.13	61.80	52.68	56.87	58.65	59.88	59.70	54.05
	SD	7.97	7.28	6.94	12.69	11.02	10.57	11.77	12.13	10.72	9.65	10.17	12.37	9.35
F(1,148) =		2.80	7.96	0.50	0.03	13.50	0.33	2.13	5.44	3.69	17.05	27.76	0.48	4.34
Obesity (N = 60)														
	Mean	51.87	57.75	52.68	61.03	61.08	61.13	65.38	50.33	58.83	59.25	59.92	57.92	59.18
	SD	8.43	11.81	9.13	9.32	10.15	9.56	12.13	10.46	9.79	9.93	13.98	11.18	9.44
F(1,148) =		0.79	2.50	0.18	20.89	20.80	17.46	0.10	15.79	0.74	14.36	23.29	2.74	1.13

* $p < .05$ ** $p < .01$ *** $p < .001$ **** $p < .0001$

Table 6

Comparison of Organicity Scale Mean Scores:
Brain Damage Group by Gender

<u>Scales</u>		<u>Males</u>	<u>Females</u>	<u>ANOVA Results</u>
Hovey		N=66	N=24	
	M	3.32	3.04	F(1,89) = 0.90
	SD	1.14	1.43	
Pseudoneurologic		N=66	N=24	
	M	7.18	7.00	F(1,89) = 0.06
	SD	3.29	3.12	
Sc-O Wt Long Long Form		N=34	N=12	
	M	82.47	77.75	F(1,45) = 1.46
	SD	11.92	10.65	
Sc-O Wt Long Form R-400		N=32	N=12	
	M	47.63	47.92	F(1,43) = 0.01
	SD	6.90	12.42	
Sc-O Unwt Long Long Form		N=34	N=12	
	M	55.15	52.75	F(1,45) = 1.02
	SD	7.30	6.43	
Sc-O Unwt Long Form R-400		N=32	N=12	
	M	33.72	34.92	F(1,43) = 0.43
	SD	4.41	7.59	
Sc-O Wt Short Long Form		N=34	N=12	
	M	48.18	44.33	F(1,45) = 1.68
	SD	9.16	7.76	
Sc-O Wt Short Form R-400		N=32	N=12	
	M	23.03	22.25	F(1,43) = 0.12
	SD	5.67	8.86	
P-O Scale Long Form		N=34	N=12	
	M	30.76	29.08	F(1,45) = 0.34
	SD	8.67	8.18	
P-O Scale Form R-400		N=32	N=12	
	M	28.06	32.92	F(1,43) = 4.25*
	SD	7.53	4.96	

*p < .05

Comparison of Organicity Scale Mean Scores Across Brain Damage Subgroups

* $p < .05$

Table 4

Organicity Scale Mean Scores: Comparison of
Brain Damage Group to Psychotic, Nonpsychotic, Pain, and Obesity Groups

Organicity Scale		Brain Damage	Groups			
			Psychotic	Non- Psychotic	Pain	Obesity
Hovey	N=	90	60	60	60	60
	Mean	3.26	2.27	1.90	2.95	2.45
	SD	1.20	1.21	1.32	1.16	1.03
			$F(1,148)$ =24.48****	$F(1,148)$ =42.47****	$F(1,148)$ =2.41	$F(1,148)$ =18.20***
Pseudoneurologic	N=	90	60	60	60	60
	Mean	7.13	7.07	8.10	8.02	6.58
	SD	3.23	2.93	3.43	2.74	2.64
			$F(1,148)$ =0.02	$F(1,148)$ =3.07	$F(1,148)$ =3.03	$F(1,148)$ =1.20
Sc-0 Wt. Long Group/Long Form	N=	46	43	57	60	60
	Mean	81.24	73.56	73.81	81.48	75.92
	SD	11.67	10.18	14.16	10.05	11.27
			$F(1,88)$ =10.88**	$F(1,102)$ =8.18**	$F(1,105)$ =0.02	$F(1,105)$ =5.63*
Sc-0 Wt Long Form R-400	N=	44	17	3	-	-
	Mean	47.70	39.24	42.67	-	-
	SD	8.59	9.11	5.56	-	-
			$F(1,60)$ =11.53**	-	-	-
Sc-0 Unwt Long Group/Long Form	N=	46	43	57	60	60
	Mean	54.52	49.35	49.32	55.03	50.95
	SD	7.09	7.57	9.86	5.93	7.19
			$F(1,88)$ =11.08**	$F(1,102)$ =9.05**	$F(1,105)$ =0.16	$F(1,105)$ =6.50*
Sc-0 Unwt Long Form R-400	N=	44	17	3	-	-
	Mean	34.05	27.47	30.33	-	-
	SD	5.39	5.57	3.30	-	-
			$F(1,60)$ =19.93***	-	-	-
Sc-0 Wt Short Group/Long Form	N=	46	43	57	60	60
	Mean	47.17	43.12	43.74	46.50	44.02
	SD	8.90	7.47	9.49	7.86	8.17
			$F(1,88)$ =5.23*	$F(1,102)$ =3.53	$F(1,105)$ =0.17	$F(1,105)$ =3.60
Sc-0 Wt Short Form R-400	N=	44	17	3	-	-
	Mean	22.82	20.76	20.33	-	-
	SD	6.59	4.40	4.50	-	-
			$F(1,60)$ =1.40	-	-	-
P-0 Scale Group/Long Form	N=	46	43	57	60	60
	Mean	30.33	26.56	24.00	33.05	30.03
	SD	8.49	7.89	9.04	6.01	7.89
			$F(1,88)$ =4.69*	$F(1,102)$ =13.16***	$F(1,105)$ =3.74	$F(1,105)$ =0.03
P-0 Scale Form R-400	N=	44	17	3	-	-
	Mean	29.39	20.35	20.35	-	-
	SD	7.21	7.72	7.49	-	-
			$F(1,60)$ =18.51***	-	-	-

* $p < .05$ ** $p < .01$ *** $p < .001$ **** $p < .0001$

Table 3

Organicity Classification Hit Rate Percentages
by Gender: Brain Damage Group

Organicity Scale or Index	Males	Females	χ^2
(1) 2-9/9-2	0.0	0.0	-
(2) 1-9/9-1	0.0	0.0	-
(3) 1-3-9	0.0	0.0	-
(4) Ayer's et. al. Sc Cutting Score	68.2	87.5	$\chi^2(1, N=90) = 3.65$
(5) Russell's Sc Cutting Score	69.7	91.7	$\chi^2(1, N=90) = 4.96^*$
(6) Golden's et. al. F Cutting Score	48.5	66.7	$\chi^2(1, N=90) = 2.42$
(7) Psychotic Triad Cutting Score	65.2	91.7	$\chi^2(1, N=90) = 6.51^*$
(8) Hs-Pt Index	66.7	79.2	$\chi^2(1, N=90) = 1.49$
(9) Watson & Thomas Rule 1	22.7	8.3	$\chi^2(2, N=90) = 11.70^{**}$
(10) Watson & Thomas Rule 2	60.6	91.7	$\chi^2(1, N=90) = 8.24^{**}$
(11) Watson & Thomas Rule 3	37.9	27.3	$\chi^2(1, N=90) = 9.75^{**}$
(12) Watson & Thomas Rule 4	47.0	12.5	$\chi^2(1, N=90) = 9.12^{**}$
(13) Russell's Key Short Form	62.1	75.0	$\chi^2(1, N=90) = 2.40$
(14) Russell's Key All Rules Applied	65.2	79.2	$\chi^2(1, N=90) = 1.79$
(15) Markowitz's Signs	40.9	54.2	$\chi^2(1, N=90) = 18.71^{***}$
(16) Hovey Scale	51.5	41.7	$\chi^2(1, N=90) = 0.74$
(17) Pseudoneurologic	51.5	45.8	$\chi^2(1, N=90) = 0.28$
(18) Sc-0 Wt Long Form	63.6	50.0	$\chi^2(1, N=90) = 1.37$
(19) Sc-0 Unwt Long Form	71.2	66.7	$\chi^2(1, N=90) = 0.20$
(20) Sc-0 Wt Short Form	53.0	41.7	$\chi^2(1, N=90) = 0.97$
(21) P-0 Scale	59.1	70.8	$\chi^2(1, N=90) = 1.15$

* $p < .05$ ** $p < .01$ *** $p < .001$

^aResults based on classification into three categories (organic, Schizophrenic, or unable to be diagnosed) and thus a $2 \times 3 \chi^2$ test was performed for each comparison.

^bResults based on classification into three categories (organic, Schizophrenic, or invalid) and thus a $2 \times 3 \chi^2$ test was performed for each comparison.

Table 2 (continued)

Groups	Organicity Scale or Index									
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Watson & Thomas Rule 4	Russell's Key Short Form	Russell's Key All Rules	Markowitz's Signs	Hovey Scale	Pseudoneurologic	Sc-0 Mt. Long Form	Sc-0 Unwt. Long Form	Sc-0 Mt. Short Form	P-0 Scale
Diffuse	23.3	70.0	76.7	33.3	43.3	50.0	60.0	70.0	46.7	70.0
Right Hemisphere	40.0	73.3	73.3	46.7	46.7	46.7	66.7	80.0	60.0	53.3
Left Hemisphere	50.0	53.3	56.7	53.5	56.7	53.3	53.3	60.0	43.3	63.3

Comparison	χ^2 Test Results									
	$\chi^2(1, N=60)=$									
Diffuse/Right	2.00	3.02 ^a	0.18	1.16 ^b	0.13	0.13	0.36	0.89	1.14	1.83
Diffuse/Left	4.67*	1.78 ^a	2.78	2.45 ^b	1.13	0.13	0.34	0.73	0.13	0.38
Right/Left	0.67	5.49 ^a	1.65	0.80 ^b	0.67	0.33	1.18	2.94	1.74	0.69

* $p < .05$ ^aResults Based on classification into three categories (organic, Schizophrenic, or unable to be diagnosed) and thus a 2 x 3 χ^2 test was performed- $\chi^2(2, N=60)$ ^bResults Based on classification into three categories (organic, Schizophrenic, or invalid) and thus a 2.3 χ^2 test was performed- $\chi^2(2, N=60)$

Table 16

Results of Discriminant Analysis: Right Hemisphere and
Left Hemisphere Brain Damage Subgroups

Standardized Canonical Discriminant Function Coefficients		Unstandardized Canonical Discriminant Function Coefficients	
Scale L	0.85584	Scale L	0.12297
Scale F	0.77656	Scale F	0.06072
Scale 4	-0.31782	Scale 4	-0.02841
Scale 9	0.39636	Scale 9	0.03376
		(constant)	-10.43166

Eigenvalue = 0.39997 Canonical Correlation = 0.53451 Wilk's Lambda = 0.71430

Discriminant Function Group Means
(Group Centroids)

Right Hemisphere Group = -0.62180 Left Hemisphere Group = 0.62180

Classification Function Coefficients

Right Hemisphere Group		Left Hemisphere Group	
Scale 1	1.45988	Scale 1	1.61280
Scale F	0.28016	Scale F	0.35567
Scale 4	0.39379	Scale 4	0.35846
Scale 9	0.54616	Scale 9	0.58815
(constant)	-74.35419	(constant)	-87.32710

Classification Results

		Predicted Group Membership	
Actual Group Membership	N	Right Hemisphere	Left Hemisphere
Right Hemisphere	90	70.0%	30.0%
Left Hemisphere	60	33.3%	66.7%

Total of "grouped" cases correctly classified: 68.33%

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Case Study of dementia referred from Psychiatrist as Depression

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Abstract

One of the most common diagnostic errors made by psychiatrists and occasionally even psychologists is confusing depression and dementia. This paper reports the referral from a psychiatric ward of a 55 year old woman who had been treated for a year and a half as an outpatient by a civilian psychiatrist for depression. The woman showed little improvement under this treatment and was eventually hospitalized and referred to the Psychology Service for diagnostic assistance. The patient was seen by a psychology intern and in addition to clinical interview was administered an MMPI and a Rorschach. While the report of that evaluation failed to confirm the diagnosis of depression, it did not arrive at a likely alternative. When the inpatient psychiatrist re-referred the patient with the explicit request to rule out an organic brain disorder, it was immediately and unequivocally recognized that indeed the patient exhibited a moderately advanced Alzheimer's type dementing disorder. The neuropsychological evaluation included the use of a somewhat augmented Halstead-Reitan Battery. This case study provides a review of the data both initially and subsequently collected from this patient, an analysis of how errors such as this are made and recommendations regarding how similar errors can be avoided.

In August 1984 a consultation request was received from this medical center's psychiatric ward with a typically cryptic reason for request: "Psychological testing (MMPI)." while the response to that request did not support the diagnosis of depression for which the patient had received outpatient psychiatric treatment for a year and a half, it failed to identify the dementing disorder which was primarily responsible for the patient's symptoms. Confusion between depression and dementia is a common though easily avoidable error made by psychiatrists and psychologists alike. The purpose of presenting this case study is not to review the criteria for differentiating these disorders but is rather to illustrate the need to vigilantly scrutinize allegedly depressed older patients for signs of neuropsychological deterioration.

The consultation request identified above was assigned to a psychology intern near the end of her training. Due to previously demonstrated competence, the intern was functioning with a relative degree of autonomy. The patient was interviewed and administered a Shipley Institute of Living Scale, an MMPI, and a Rorschach. The Shipley yielded an estimated WAIS IQ of 74 and a Conceptual Quotient of 58. The patient's MMPI Welsh Code was 872" of 361- 495/ F/L/K:. The computer printout of the MMPI profile is presented in figure 1. The computer printout of all MMPI scales is

included as Figure 2a and 2b. The Rorschach structural summary is presented in Figure 3. Rorschach responses, sequence of scores, and location chart are included as Appendix A.

The patient's MMPI was interpreted as suggesting feelings of being overwhelmed, anxiety, depression and withdrawal. In addition, it was noted that psychomotor retardation, confusion and memory difficulties were also reported. The Rorschach results, however, were interpreted as inconsistent with clinically significant depression. The patient was described as having limited stress tolerance, cognitive constriction and significant perceptual inaccuracy. No decreased self esteem, and only mild subjective distress was inferred from the protocol. The conclusion of the evaluation was that while puzzling, the data did not support depression as a primary diagnosis.

Almost immediately after that report was returned, the patient was re-referred with the following explanation: "55 y/o Caucasian female treated for major depression with history of confusion and disorientation for neuropsychological testing. Provisional diagnosis: Major depression R/O OBS." As soon as this second consultation request was received, the supervising psychologist realized with considerable embarrassment what had been overlooked in the initial evaluation. The neuropsychological evaluation which was then performed documented moderately to severely advanced dementia. A summary of those data are contained in Figure 4. While language related abilities and somato-sensory abilities remained essentially intact, all higher cognitive abilities including attention/concentration, memory, and problem solving abilities were markedly impaired.

It is felt that the experience described above contains a number of points which in retrospect should have alerted the psychologists to the potential for the oversight which occurred.

1. The intern doing the initial evaluation was highly regarded due to her competence demonstrated during the first ten months of the training year. This experience, however, included limited exposure to neuropsychological screening. Furthermore the intern was from a counseling psychology program which provided relatively less preparation than typical clinical programs in the biological bases of behavior and in the evaluation of individuals outside of an educational setting. It is felt that less experienced psychologists, particularly those with limited formal supervised training in evaluating neuropsychological disorders, are particularly vulnerable to such errors.

2. Other problems contributing to error in this case include a heavy workload over an extended period of time which contributed to overly cursory supervision and pressure to achieve closure quickly. The request for this evaluation was received during the late summer when six interns were being supervised by only two staff psychologists. Prior to the second evaluation, the intern was the only psychologist to have actually observed this patient. When the patient was interviewed by the supervising psychologist during the second phase of data collection, it was clinically

obvious that a dementing disorder was present. In addition, it is possible that, at least subtly, a "lab test" mentality may have colored the consultation process, tending to limit the assessment to issues identified by the consultation request (even if those issues were more implied than expressed).

3. The most serious error underlying this oversight was failure to follow up when a working diagnosis of depression was not confirmed. Especially for patients in their sixth decade or beyond, ambiguity regarding the presence of depression ought to immediately prompt consideration of and evaluation for dementia. While this patient is relatively young for presentation with dementia, it is precisely this age group in which dementia may be most likely to be overlooked.

4. In the report of the original evaluation it is embarrassing to acknowledge that the Shipley data was not even reported. The Shipley is a very economical way of generating an IQ estimate and a comparison between vocabulary and problem-solving/reasoning ability. In a nonimpaired population (either emotionally or organically), with WAIS IQs within a standard deviation or so from the mean, the Shipley estimated IQ usually is within 5 points of the WAIS IQ. Equivalence of vocabulary and reasoning ability results in Conceptual Quotient of 100. Reasoning ability stronger or weaker than vocabulary results in CQs greater or lower than 100, respectively. While the patient obtained an estimated IQ within the normal range, the CQ of 58 represented a clear signal of disrupted higher cognitive abilities, i.e., of poor reasoning compared to vocabulary ability. As a clinical rule of thumb, CQs falling below 85 should prompt closer examination. While severe depression may indeed be accompanied by some decline in CQ score, the score of 58 is clearly excessively low.

5. Before reviewing this person's MMPI, let it be said that failure to recognize dementia on the basis of this instrument may be forgiven. Despite many attempts to make it so, the MMPI remains a notoriously poor discriminator between brain impaired and non-brain impaired subject. To begin with validity issues, despite some basis for concern about inconsistent item endorsement (from the combination of TR and Cs) the protocol appears interpretable. Response bias indicators provide some evidence of overendorsement but not of severe proportions (F, Af, Ds and sum of Obvious minus subtle T-scores). The high point triad of scales 2, 7, and 8 is a familiar pattern commonly seen in individuals experiencing a high level of distress. Examination of the Harris and Lingoes subscales shows high loadings both for subjective depression and for feeling overwhelmed. Comparison between T-scores on Df and DQ is consistent with acknowledgment of unsuccessful coping. The Wiggins' DBP supports the overall conclusion of depression while the ORG score suggests complaints about cognitive changes. The 0 scale elevation suggests the social withdrawal commonly seen among depressed persons. The MAC of 69 in a white woman must raise suspicion of substance abuse.

At a workshop at William Beaumont Army Medical Center, this patient's MMPI was presented "blind" to Roger Greene, author of the successful MMPI text and an experienced neuropsychologist. He did not suggest

neuropsychological impairment as a diagnostic option. Nevertheless, review of the descriptors in the intern's report of the MMPI reveals "confusion, memory difficulties and psychomotor retardation." Those characteristics might reasonably bring neuropsychological deficits to mind. The constellation of Harris and Lingoes scale elevations commonly seen in persons who are feeling overwhelmed (PSYCHOMOTOR RETARDATION and MENTAL DULLNESS under scale 2, LASSITUDE-VALAISE under scale 3, and EMOTIONAL ALIENATION, LOSS OF EGO MASTERY-COGNITIVE, and LOSS OF EGO MASTERY-COGNITIVE under scale 8) is commonly seen with brain impaired persons who are frightened by their inability to function effectively. Remembering the wiggins' ORGANIC SYMPTOMS scale elevation, at least retrospectively, some basis for raising suspicion of brain impairment appears to be present.

6. To begin a review of the Rorschach, it appears to be a valid protocol. Although Lambda is high (1.4), R is also sufficiently high to proceed safely to examine the structural summary. The D of -1 suggests limited stress tolerance. The absolute value of EA suggests relatively limited coping resources and the EB of 2:1 implies an absence of a consistently employed problem solving approach (more about that later). Turning to the eb, 4 FMs is unremarkable and 2 Fys is barely beyond the normal range. The SCZI of 2 is too low for very serious consideration of schizophrenia as a diagnostic hypothesis. The DEPI is 0! This person shows none of the more pathological signs of depressed effect or ideation and shows a normal or appropriate degree of self focus. Thus there is essentially no support for either reactive depression ($m=0$, $Y=2$) or chronic/recurring depression. The SCZI helps to call attention to problems with perceptual inaccuracy ($F+\% = 57$, $X+\% = 54$ and with 8 of 11 poor form responses being minuses). The most recent Rorschach Workshop's newsletter published by John Exner recommends routine computation of a "-Fqx%" (the percentage of all minus form quality within R). He tentatively recommends 15% as a criterion for concluding the presence of excessive severe perceptual distortion. This protocol shows a -Fqx% of 33, clearly implying severely impaired perceptual accuracy. Review of special scores reveals an apparent absence of thinking disturbance accompanying the severe perceptual problems. Continuing a standard "sweep" of the structural summary, Zd is noted to be beyond the normal range. While this person appears to be an underincorporator, a cognitive characteristic often seen among hysterics, this tends to be an enduring stylistic issue and is unlikely to reveal much diagnostically about the basis for this patient's deteriorated functioning. When this person responds with spontaneous action rather than cerebral reflection, she is likely to show adaptively modulated affect (FC:Cr+C). She shows a mild tendency toward withdrawal from emotionally laden stimuli (Afr) and a stronger tendency to avoid dealing with complexity in her environment (Lambda). It might fairly be said that she is cognitively unambitious (w:M, Zd, and w:D) and rather rigid (a:p and Ma:Mp).

Besides clearly contradicting the diagnosis of depression, the Rorschach protocol contains a number of features which are consistent with neuropsychological impairment. Perhaps the most striking finding in this record is the high incidence of "-" or arbitrary form quality. Exner frequently points out that responding to the Rorschach inkblots is fundamentally a perceptual problem solving task. This person's severely

impaired perceptual accuracy is thus quite consistent with the impaired problem solving abilities noted in the neuropsychological evaluation. Although good research into Rorschach performance in a neuropsychologically impaired population is still quite limited, one finding reported by Exner's group is a higher incidence of "ambitents" than in the normal population. Ambitents are those persons with a difference of less than 2.5 between the number of human movement responses and the weighted sum of color responses. Ambitents show a maladaptive inconsistency in their problem solving approach. They are often observed to vacillate and fail to learn efficiently from their experience. This patient's EB of 2:1 shows her indeed to fulfill the ambitent criterion. Another cognitive or speech characteristic often noted in brain impaired persons is perseveration, while none of the Comprehensive System's criteria for scoring perseveration are met, it is interesting to note the extraordinary frequency of clothing content responses, while one fourth of all responses contain clothing content (which is remarkable in and of itself), five of the final eight responses contain clothing content. Four of those five clothing content responses were scored "minus" for form quality. Thus, the patient appears to demonstrate significant inflexibility regarding response content at great expense to perceptual accuracy.

The purpose of reviewing this case is to illustrate the need for alertness to the presence of dementia in allegedly depressed patients. Psychologists with little experience working with brain impaired persons and those who get professionally "overextended" may be particularly at risk for overlooking this possibility. For those who may routinely employ the Shipley as part of a personality screening battery, by all means attend to the CQ score. When reviewing personality data on "depressed" patients with the MMPI and Rorschach, keep in mind what little is known about the characteristics of a brain impaired reference group on those personality instruments. There is no shortage of instruments and procedures for assessing the presence of neuropsychological impairment in general or dementia in particular. Unless the psychologist recognizes the need to employ those techniques, however, their value is, shall we say, limited.

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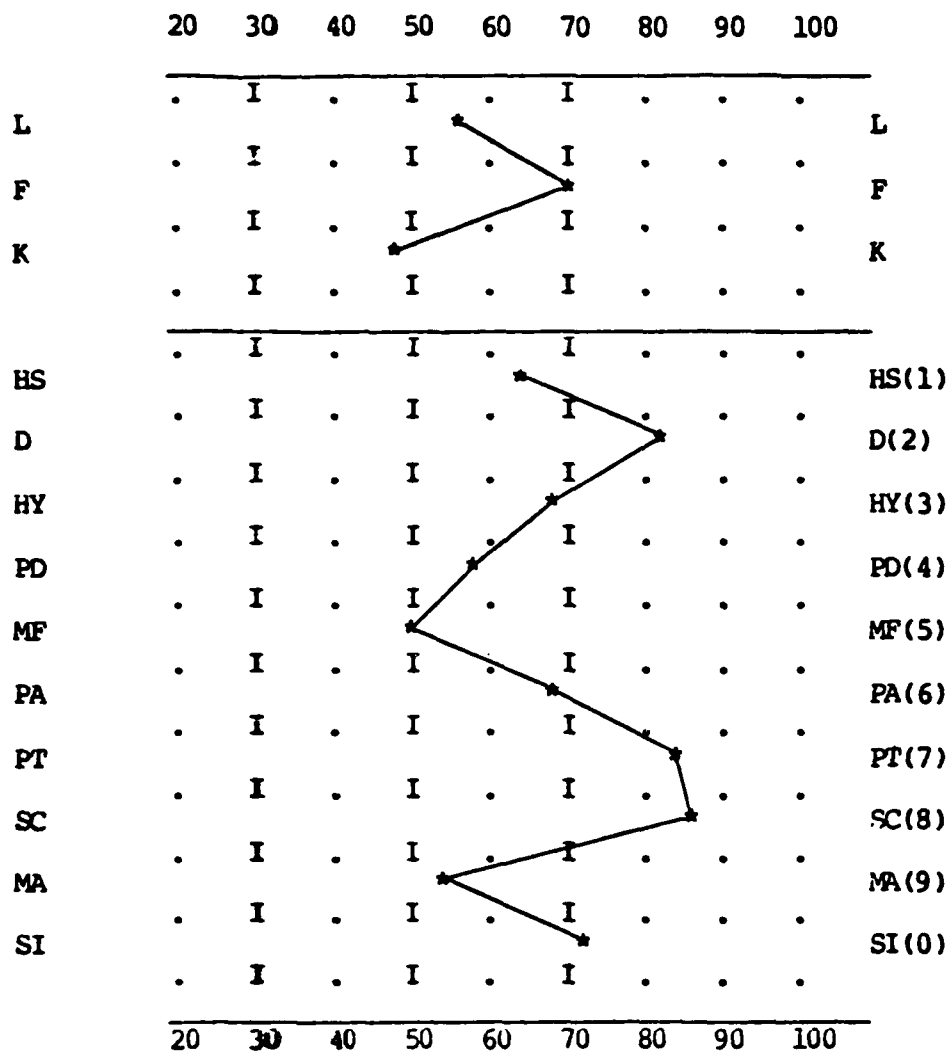


Figure 1

COMPUTER PRINTOUT OF MMPI PROFILE

M M P I
TRIS-80/MMPI SCORING PROGRAM (FORM R)

CLIENT: A,H
FORM: LONG
DATE: 08/02/84
AGE: 55
SEX: FEMALE

	RAW SCORE	T-SCORE	ELEVATION
Q (CANNOT SAY)	1	41 (Q)	
L	6	57 (L)	
F	10	71 (F)	++
K	11	48 (K)	
HS (1)	14	64 (HS)	
D (2)	36	82 (D)	++
D-O	24	79 (D-O)	++
D-S	12	54 (D-S)	
D-1 (SUBJECTIVE DEPRESSION)	21	81 (D-1)	++
D-2 (PSYCHOMOTOR RETARDATION)	11	76 (D-2)	+-
D-3 (PHYSICAL MALFUNCTIONING)	6	67 (D-3)	
D-4 (MENTAL DULLNESS)	11	91 (D-4)	++
D-5 (BROODING)	9	93 (D-5)	++
HY (3)	29	68 (HY)	
HY-O	16	70 (HY-O)	++
HY-S	13	50 (HY-S)	
HY-1 (DENIAL OF SOCIAL ANXIETY)	2	43 (HY-1)	
HY-2 (NEED FOR AFFECTION)	4	47 (HY-2)	
HY-3 (LASSITUDE-MALAISE)	8	70 (HY-3)	++
HY-4 (SOMATIC COMPLAINTS)	9	66 (HY-4)	
HY-5 (INHIBITION OF AGGRESSION)	4	54 (HY-5)	
PD (4)	18	58 (PD)	
PD-O	10	64 (PD-O)	++
PD-S	8	47 (PD-S)	
PD-1 (FAMILIAL DISCORD)	3	57 (PD-1)	
PD-2 (AUTHORITY PROBLEMS)	4	54 (PD-2)	
PD-3 (SOCIAL IMPERTURBABILITY)	4	39 (PD-3)	-
PD-4A (SOCIAL ALIENATION)	7	56 (PD-4A)	
PD-4B (SELF ALIENATION)	11	78 (PD-4B)	++
MF (5)	36	51 (MF)	
PA (6)	14	68 (PA)	
PA-O	7	67 (PA-O)	++
PA-S	7	57 (PA-S)	
PA-1 (PERSECUTORY IDEAS)	2	51 (PA-1)	
PA-2 (POIGNANCY)	5	69 (PA-2)	
PA-3 (NAIVETE)	2	42 (PA-3)	
PT (7)	35	84 (PT)	++
SC (8)	36	87 (SC)	++
SC-1A (SOCIAL ALIENATION)	5	55 (SC-1A)	
SC-1B (EMOTIONAL ALIENATION)	7	94 (SC-1B)	++
SC-2A (L. OF E. M.-COGNITIVE)	6	79 (SC-2A)	++
SC-2B (L. OF E. M.-CONATIVE)	13	105 (SC-2B)	++
SC-2C (L. OF E. M.-DEFECTIVE INHIBITION)	6	74 (SC-2C)	++
SC-3 (BIZARRE SENSORY EXPERIENCES)	9	75 (SC-3)	++
MA (9)	16	54 (MA)	
MA-O	10	66 (MA-O)	+-
MA-S	6	38 (MA-S)	-
MA-1 (AMORALITY)	3	64 (MA-1)	
MA-2 (PSYCHOMOTOR ACCELERATION)	5	60 (MA-2)	
MA-3 (IMPETURBABILITY)	1	38 (MA-3)	-
MA-4 (EGO INFLATION)	2	46 (MA-4)	

Figure 2a
MMPI PRINTOUT

SI (0)	46	72 (SI)	++
ES (EGO-STRENGTH)	29	32 (ES)	-
MAC ALCOHOL (POSS. = 24-27, PROB. = > 27)	25	72 (MAC)	?
O-H (OVERCONTROLLED HOSTILITY)	15	57 (O-H)	
CA (CAUDALITY)	19	63 (CA)	
LB (LOW BACK) (POSS. = 11-13, PROB. = > 13)	10	53 (LB)	
DY (DEPENDENCY)	35	63 (DY)	
DO (DOMINANCE)	9	37 (DO)	-
CN (CONTROL)	20	46 (CN)	
ORG (ORGANIC SYMPTOMS)	16	70 (ORG)	+
REL (RELIGIOUS FUNDAMENTALISM)	9	57 (REL)	
HOS (MANIFEST HOSTILITY)	10	54 (HOS)	
SOC (SOCIAL ADJUSTMENT)	15	60 (SOC)	
HEA (POOR HEALTH)	13	69 (HEA)	
PHO (PHOBIAS)	11	55 (PHO)	
FEM (FEMININE INTERESTS)	22	56 (FEM)	
PSY (PSYCHOTICISM)	15	65 (PSY)	
DEP (DEPRESSION)	23	78 (DEP)	+
MOR (POOR MORALE)	18	69 (MOR)	
AUT (AUTHORITY CONFLICT)	13	63 (AUT)	+
FAM (FAMILY PROBLEMS)	2	42 (FAM)	
HYP (HYPOMANIA)	15	56 (HYP)	
WELSH FACTOR A (ANXIETY)	27	64 (A)	
WELSH FACTOR R (REPRESSION)	20	55 (R)	
TR (TEST-RETEST INDEX)	5	68 (TR)	
CS (CARELESSNESS)	4	64 (CS)	
BF (BLACK INFREQUENCY)	9	68 (BF)	
DS (DISSIMULATION)	15	67 (DS)	
MP (POSITIVE MALINGERING)	13	54 (MP)	

*** CRITICAL ITEMS ***

** DEVIANT BELIEFS **

MY SPEECH IS THE SAME AS ALWAYS(F)
IF PEOPLE HAD NOT HAD IT IN FOR ME I WOULD HAVE BEEN MUCH MORE SUCCESSFUL

PERCENT ENDORSED = 13 %

**DEVIANT THINKING AND EXPERIENCE **

WHEN I AM WITH PEOPLE I AM BOTHERED BY HEARING VERY QUEER THINGS
PECULIAR ODORS COME TO ME AT TIMES
I HAVE HAD SOME VERY UNUSUAL RELIGIOUS EXPERIENCES

PERCENT ENDORSED = 27 %

** ANTISOCIAL ATTITUDE **

I DON'T BLAME ANYONE FOR TRYING TO GRAB EVERYTHING HE CAN GET IN THIS WORLD
MOST PEOPLE MAKE FRIENDS BECAUSE FRIENDS ARE LIKELY TO BE USEFUL TO THEM
I HAVE NEVER BEEN IN TROUBLE WITH THE LAW(F)

PERCENT ENDORSED = 33 %

** SEXUAL CONCERN AND DEVIATION **

I WISH I WERE NOT BOTHERED BY THOUGHTS ABOUT SEX

PERCENT ENDORSED = 14 %

Figure 2b

MMPI PRINTOUT (continued)

STRUCTURAL SUMMARY

= 24		Zf = 6	ZSum = 13.0	P = 3	(2) = 8		
Location Features			Determinants (Blends First)		Contents		Contents (Idiographic)
f = 2					H = 5	M =	Masks = 2
= 14					(H) =	St = 1	Papoose Carrier = 1
d = 8					Hd = 2	Cg = 6	
= 1					(Hd) =	Ct =	
W =					A = 8	Ex =	
					(A) =	Fi =	
					Ad =	Fid =	
					(Ad) =	Go =	
					Ab =	Hb =	
					Al =	La =	
					An =	Na =	
					Art =	Sx =	
					Ay =	Xy =	

RESULTS OF NEUROPSYCHOLOGICAL EXAMINATION

PATIENT: H A AGE: 55 SEX: F EDUCATION: 12th HANDEDNESS: R
 DATE(S) TESTED: 14 Aug 84 TESTED BY: Anderson

WAIS or WISC-R

VIO-----	82
PIQ-----	85
FSIQ-----	83
VMS-----	
PMS-----	
Total WS-----	
Information-----	5
Comprehension-----	5
Arithmetic-----	6
Similarities-----	6
Digit Span-----	8
Vocabulary-----	7
Digit Symbol-----	5
Picture Completion-----	3
Block Design-----	7
Picture Arrangement-----	4
Object Assembly-----	8
Coding-----	-
Mazes-----	-

WRAT

Test Results:	Raw Score	Grade Rating	%
Reading	<u>49</u>	<u>7.6</u>	<u>25</u>
Spelling	<u>27</u>	<u>7.9</u>	<u>47</u>
Arithmetic	<u>15</u>	<u>3.9</u>	<u>23</u>

SENSORY PERCEPTUAL EXAMINATION

		R	L
Imperceptions:	Tactile	<u>0</u>	<u>0</u>
	Auditory	<u>0</u>	<u>0</u>
	Visual	<u>0</u>	<u>0</u>
TFL		<u>0</u>	<u>2</u>
FT#W		<u>4</u>	<u>3</u>
TFR		<u>10"0x</u>	<u>10"0x</u>
Grooved Peg Board			
R-92(0)		<u>L</u>	<u>118(0)</u>

HALSTEAD'S NEUROPSYCHOLOGICAL TEST BATTERY

Category Test (51+) 91*
 Tactual Performance Test VII=8
 Dominant Hand: Discontinued due to
 Non-dominant Hand: patient's extreme
 Both Hands: agitation.
 (15.7+) Total Time _____
 (5-) Memory _____
 (4-) Localization _____
 Seashore Rhythm Test (6+)
 Raw Score: 21 10*
 Speech Sounds Perception Test: 14*
 (8+)
 Finger Oscillation Test (50-) 43*
 Dominant Hand: 43 * = impaired range
 Non-dominant Hand: 59

IMPAIRMENT INDEX: 1.0

STRENGTH OF GRIP

Dominant Hand: 20 kilograms
 Non-dominant Hand: 13 kilograms

TRAIL MAKING TEST

Part A 32 seconds, 0 errors
 Part B 147 seconds, 0 errors
 Aphasia (errors) #11, 25, 26, 29
Dyscalculia, mild constructional problems

MMPI WELSH CODE:

872"0'361-495/ F" L/K:

	Semantic	Figural	
WNS			
Immediate	<u>5</u>	<u>4</u>	SRT-
Delayed	<u>5</u>	<u>4</u>	Disc

Figure 4

RESULTS OF NEUROPSYCHOLOGICAL EVALUATION

monitoring may need more dynamic and specific procedures can be obtained by fixed batteries.

In this phase, the patient may become a more appropriate candidate for intensive long term cognitive rehabilitation. The types of interventions depend on the particular dysfunctions, the stages of recovery, and resources available. These interventions are experimental (Miller, 1984) but often useful with carefully selected patients. It is important to have a conceptual understanding of such interventions and carefully select interventions (Luria, 1963; Rothi and Horner, 1983). Unrealistic expectations need to be avoided while encouraging the family and patient toward continued recovery. With the more severely injured patient, the family may be desperate to find some shortcut or magic to resolve impairments which may be unchangeable. Family members may be vulnerable to false hopes. The neuropsychologist has a responsibility to make family interventions which facilitate realistic expectations. Acceptance of impairments and environmental adjustments rather than heroic attempts to modify the unchangeable may be the most realistic in some cases. The technology of cognitive rehabilitation is new, experimental and promising though often limited. Referrals to appropriate professionals, agencies and institutions are necessary. Functioning as a team member is an important role for the neuropsychologist as rehabilitation of the severely injured patient is usually a rehabilitation team effort (Diller, 1984). With the less impaired patient, ongoing psychotherapy dealing with the existential dilemmas resulting from disruptions in the intra and interpersonal world may be necessary.

GUIDELINES

In the phases of head injury recovery, the impairments encountered during each phase, and the assessment and management needs of all concerned, the following guidelines are referred to the neuropsychologist:

- o Adjust assessments and interventions according to the phase of recovery.
- o Avoid using comprehensive fixed batteries in the early phases.
- o Use specific procedures which have been developed for a phase.
- o Focus the assessment upon orientation, arousal, attention, concentration, rate of information processing and memory in the posttraumatic and rapid recovery phases.

Intelligence Scales can be useful with patients who have recovered sufficient basic functioning to manage such tasks. With the more severely impaired patient, it may be premature or impossible to use the intelligence battery. Because the patient is making rapid changes in this phase, it is inappropriate to make any determination as to the absolute outcome of the patient's problems. Extensive batteries of neuropsychological evaluation are often inappropriate during this phase of recovery. The assessments can be accomplished in briefer periods of time and with less stress to the patient. Because a leveling off will not occur until the plateau phase, the results of comprehensive evaluations will not give an accurate picture of the long-term deficits. A Luria Investigation (Christensen, 1975) can be useful to scan the overall higher cortical system to both determine deficits and monitor changes. The Rey Auditory Verbal Learning Test, the California Auditory Verbal Learning Test, Benton's Serial Digit Learning Test, the Selective Reminding Test, and similar procedures can be useful to explore the patient's overall verbal learning ability. Memory assessment in both verbal and visual modalities is important. Memory assessment can be accomplished with the Wechsler Memory Scale Russell Administration. The registration, storage and retrieval of both verbal and visual modalities should be assessed. Memory assessment must include delayed recall.

During the rapid recovery phase, the milder closed head injury can often benefit from some cognitive rehabilitation. However, due to rapid changes, foundation skills should be the focus of intervention (Bracy 1983). In the rapid recovery phase, therapeutic support of the patient and family can be helpful. Consultations regarding issues of return to employment or change of vocation are common with mild closed head injuries. With the more severely impaired patient, continued efforts are often necessary from a variety of rehabilitation specialists. During the rapid recovery phase, the more severely impaired patient will need on going stimulation and adequate environmental input to enhance improvement without overtaxation.

Plateau Phase

In the plateau recovery phase, the patient's progress will typically level and persistent impairments will manifest themselves. At this point, more comprehensive neuropsychological assessments and predictions can be made to determine the long-term residual effects of the head trauma. Comprehensive batteries of tests are necessary to explore all aspects of the patient's higher cortical functioning. Standardized neuropsychological test batteries can be supplemented with other individual neuropsychological tests as required to meet the special needs of the patient and to explore deficits in detail. Most of the standard batteries do not adequately assess attention, concentration and memory. Specific areas of deficit require a flexible approach and are rarely explored in adequate depth by standard batteries. Cognitive rehabilitation planning

educate the staff and help them with behavioral management of the patient. Families may need further support and education. Significant others can be coached to become useful therapists for the patient. The patient may need interventions to aid orientation, attention and memory. Adequate stimulation should be given to the patient to challenge, but not overwhelm tenuous information processing. Complex cognitive tasks should be avoided. The patient's energies will normally be limited with marked mental and physical fatigue. Demands should be brief. Frequent rest and sleep is often required. Family members can be guided to make these interventions and will often intuitively provide the needed support.

Rapid Recovery Phase

In the rapid recovery phase, the patient's arousal system will begin to clear and basic information processing will improve. In milder head traumas, the clearing may be quick. Severe injuries will be more gradual. Attention, concentration, mental energy, orientation, and memory functions all improve. In milder injuries, the patient and family may think the patient is back to normal. However, under stress, the patient will demonstrate significant impairments. The arousal deficits may be more subtle and difficult to assess than observed in the posttraumatic phase, but with appropriate procedures the patient will demonstrate significant impairment. If tasks of attention, concentration, and memory are escalated in their complexity, the patient will often have marked difficulties. As basic information processing improves, the patient may become more and more aware of problems that were masked during the earlier phases. Emotional crises may emerge. At the same time, patients may develop premature and unrealistic expectations of themselves to return to the full demands of personal and vocational functioning. Patients may plunge back into these pre-injury head trauma demands with little appreciation for the deficits. Patients often experience frustrating failures due to unrealistic expectations of recovery from closed head injuries. Patients may need help to make a more objective self assessment and gain realistic understanding of the existing deficits. Often patients need practical guidelines as to when to return to school or employment.

Assessment during the rapid recovery phase is best done by instruments which are not highly affected by retest because there may be a need for repeated assessments of change. Assessments should focus upon the continued fundamental information processing problems. Gronwall (1977) developed the paced Auditory Serial Addition Task to evaluate concentration problems during this phase. The instrument is most useful in making determinations as to when a patient should return to employment in mild closed head injuries. Procedures that assess speed of information processing, such as the Symbol Digit Modalities Test and the Trail Making Tests, are also useful. Reestablishing a baseline of overall functioning with the Wechsler

using the scale. The Glasgow Coma Scale can also be used to help the family understand the coma state. The families expectations for the patient may be guided by understanding the coma stages. During the coma phase, management of the patient is often left to the medical staff, physical, speech and occupational therapists. Many things can be done for the patient during coma which may enhance recovery (Nelson, 1983). The neuropsychologist familiar with these interventions can often consult with the family and involved staff. Interventions with the family can be most useful. The family of a closed head injured patient faces a most uncertain and stressful situation. Education in the phases of recovery can be organizing and reduce the stress resulting from uncertainty. Referrals to local and national head injury support groups and educational literature can be helpful. These interventions must be delivered in a sensitive and timely manner. Many families need less help than others.

Posttraumatic Amnestic Phase

During the posttraumatic amnestic phase assessment of orientation, attention, memory, and rate of information processing is most relevant. A careful interview with a neurological mental status examination (Strubb & Black, 1981) focusing upon orientation, attention, memory, and mental control can quickly identify arousal system dysfunctions. Formal tests of orientation can be useful to identify and document the status of the patient's arousal system. The Galveston Orientation and Amnesia Test (Levin et al., 1982) is an instrument specifically designed to measure the patient's posttraumatic amnestic phase. The Galveston Orientation and Amnesia Test provides a daily charting of the patient's progress and indicates normal and abnormal mental status for this level of recovery. Simple memory tasks checking registration and delayed recall of verbal and visual information are useful. Luria (1976, 1980) memory tasks can very quickly assess the stability of memory traces. The Russell Administration of the Wechsler Memory Scale can be administered to less severely impaired patients. Simple measures of speed of information processing such as the Symbol Digit Modalities Test or the Trail Making Tests can be administered to some patients. The posttraumatic amnestic phase of recovery requires minimal testing. Administration of comprehensive neuropsychological batteries is not appropriate at this time. They put unnecessary stress upon the patient and offer no more useful clinical information than a focused assessment. The results of such batteries will over estimate impairment, because the basic foundation of higher cortical functioning is impaired and undermining other higher cortical functions that may in fact be intact. Interventions during this phase include consultations with staff and family. Medical staff in centers not specializing in head trauma may be overreactive to the patient's disinhibited behavior and altered orientation. They may want to sedate the patient with medications which can interfere with recovery. Often the neuropsychologist can

dysfunctional. The patient responds to the environment through various behaviors. However, the fundamental information processing is limited. Although the patient may appear responsive, conversant, and mobile: information processing is fragile. The registration, storage and retrieval of new and old information is variable. As the restoration of the fundamental functions continues, the patients responses become more and more reliable.

During the rapid recovery phase, the arousal system is continuing its repair and this allows manifestation of other higher cortical processes. The patient is able to do more mental tasks. At this time, weaknesses of higher cortical functioning may demonstrate themselves were formerly they were masked by the fundamental deficits of the arousal system. As the arousal system completes its recovery, a leveling off of functioning occurs. Recovery may plateau at different levels depending upon the severity of impairment. Rarely does the arousal system return to pre-injury baseline even in very mild head traumas. During the plateau phase, the foundation system's restoration comes to a near standstill. In the plateau phase, persistent higher cortical impairments are manifested and can be better evaluated. Further spontaneous restoration is usually minimal. If the arousal system is minimally impaired, the patient may have good basic information processing skills and learn to work around other higher cortical deficits depending upon the extent and locus of other impairments. Any impairments in the fundamental arousal system will continue to have an erosion effect upon other higher cortical abilities with the extent determined by the severity of the impairment.

APPLICATION OF THE THEORY

The above theory has implications for patient assessment and management. A variety of individual and battery procedures are available to the neuropsychologist (Lezak, 1983; Osmon, 1983; Pendleton & Butters, 1983). The rationale for test selection for the head injured patient can be guided by an understanding of the phases of recovery.

Loss of Consciousness/Coma Phase

During the coma phase, the Glasgow Coma scale is the standard instrument for monitoring the level of coma (Teasdale & Jennett, 1974). The scale measures: eye, motor and verbal responses to various stimuli. A numerical score results determining the level of coma. Lower scores indicates deeper coma (range is 3 to 15). Usually, the medical staff will use this assessment tool. The neuropsychologist must be familiar with and able to use the Glasgow Coma Scale. The depth and length of coma has some correlation with severity of injury and the ultimate outcome. The staff may need some guidance from the neuropsychologist in

and extent of injury. Patients will predictably have problems with attention, concentration, rate of information processing and memory. These problems often overshadow other higher cortical dysfunctions such as executive, language, visual-spatial, motor, sensory, higher intellectual and emotional functions.

The first weeks and months following the posttraumatic amnesia stage is called the rapid recovery phase. During this time, patients may make significant gains. Global measures of intellectual functioning often improve dramatically within several months. In fact, major gains are typically made during this period. Bond and Brooks (1976) demonstrated that patients rarely change outcome categories after the six month period of recovery.

Following the months of rapid recovery, patients tend to level off in their recovery. Patients now enter the long-term plateau stage. Improvements are gradual. Impairments may persist with little change. The patient often has to learn to compensate for dysfunctions rather than eliminate them. Deficits may be identified which the patient or family had not previously recognized.

THEORETICAL EXPLANATION OF THE PHASES

The alterations of consciousness during coma are related to interruptions of brainstem and higher cortical interactions. Due to the trauma, some type of injury to the arousal mechanisms of the brain has occurred and results in loss of consciousness or coma. The level of coma is likely related to the extent of brainstem injury. As these mechanisms adjust or restore themselves, the person regains consciousness. However, the arousal system remains impaired and dysfunctional. More time is required for maximum restoration. The arousal system is a foundation for all higher cortical functioning (Luria, 1974, 1980). The arousal system is fundamental to all information processing. Alertness, mental energy, orientation, attention, concentration, selectivity, and various aspects of memory all depend upon the integrity of this basic system. Impairments of this system undermine all other higher cortical functions: the extent determined by the degree of dysfunction. The restoration of the foundation functions allows other more complex cortical functions to manifest themselves.

During the coma stage the foundation system is impaired to an extreme degree. The patient processes nothing. In a sense, the higher cortical system is shut down. As the arousal system begins to restore itself, the patient begins to attend to environmental stimuli. Both the arousal system and its responses are very weak. The depth of coma varies as the system improves. During the posttraumatic amnesic period, the patient's arousal system has improved, but remains severely

reconstitution (Rothi & Horner, 1983). The effectiveness of interventions to rehabilitate cognitive/behavioral functions and modify the recovery curve remain to be demonstrated by research (Miller, 1984). Some evidence indicates promising efforts in rehabilitating cognitive functions (Luria, 1963; Goldstein & Ruthven, 1983; Rosenthal, Griffith, Bond, & Miller, 1983; Edelstein & Couture, 1984).

Various phases of recovery in closed head injury are observed by many persons working with the head injured (Imes, 1983; Levin, Benton, & Grossman, 1982; Rosenthal et al., 1983) and typically include the coma, posttraumatic, and long-term recovery stages. Elaborate schemes such as the Rancho Los Amigos Hospital eight levels of cognitive functioning have been devised (Imes, 1983). The three phase scheme over simplifies. The more elaborate scheme is too unwieldy for routine clinical application.

There are four general phases in the recovery of mild to severe closed head injuries. The four general phases are the initial loss of consciousness or coma stage, the posttraumatic amnesic stage, the rapid recovery stage, and the plateau stage. Although there is considerable variability in all aspects of head injury (the mechanics, locus and extent of damage, neurobehavioral consequences), all head injuries go through these stages sequentially. The length of time in each stage and the demarkation of the stages vary from case to case depending upon severity and type of injury. In milder injuries the patient may rapidly progress through the stages while the more severe injuries will have prolonged stages.

Patients will have predictable neurobehavioral symptoms during each of the stages. In the loss of consciousness or coma stage, patients will have altered alertness ranging from barely arousable to total unconsciousness. The depth of coma can vary over time. The length of this stage may be moments or months. Patients may gradually or rapidly regain consciousness. Between the stages of coma and posttraumatic amnesia, patients may be irritable and uncontrollable. Behaviors can be extreme and bizarre. Patients may be noisy and unruly.

In the posttraumatic amnesic phase, consciousness is regained. The patient may appear awake and even be ambulatory, but will be disoriented and have memory problems. These problems may be mild or marked depending upon the severity of injury. Patients may appear to be processing information. However, later interviews indicate little to no recollection of their experiences during this stage. The length and severity of the posttraumatic amnesic stage can vary. In the milder injury, the time involved may be minutes or hours. In the more severe injury, the posttraumatic amnesic phase may persist for days, weeks or months.

Once the disorientation and amnesia clears, patients may have a variety of higher cortical dysfunctions depending on the type

THE NEUROPSYCHOLOGICAL ASSESSMENT AND MANAGEMENT OF CLOSED HEAD INJURY: GENERAL GUIDELINES

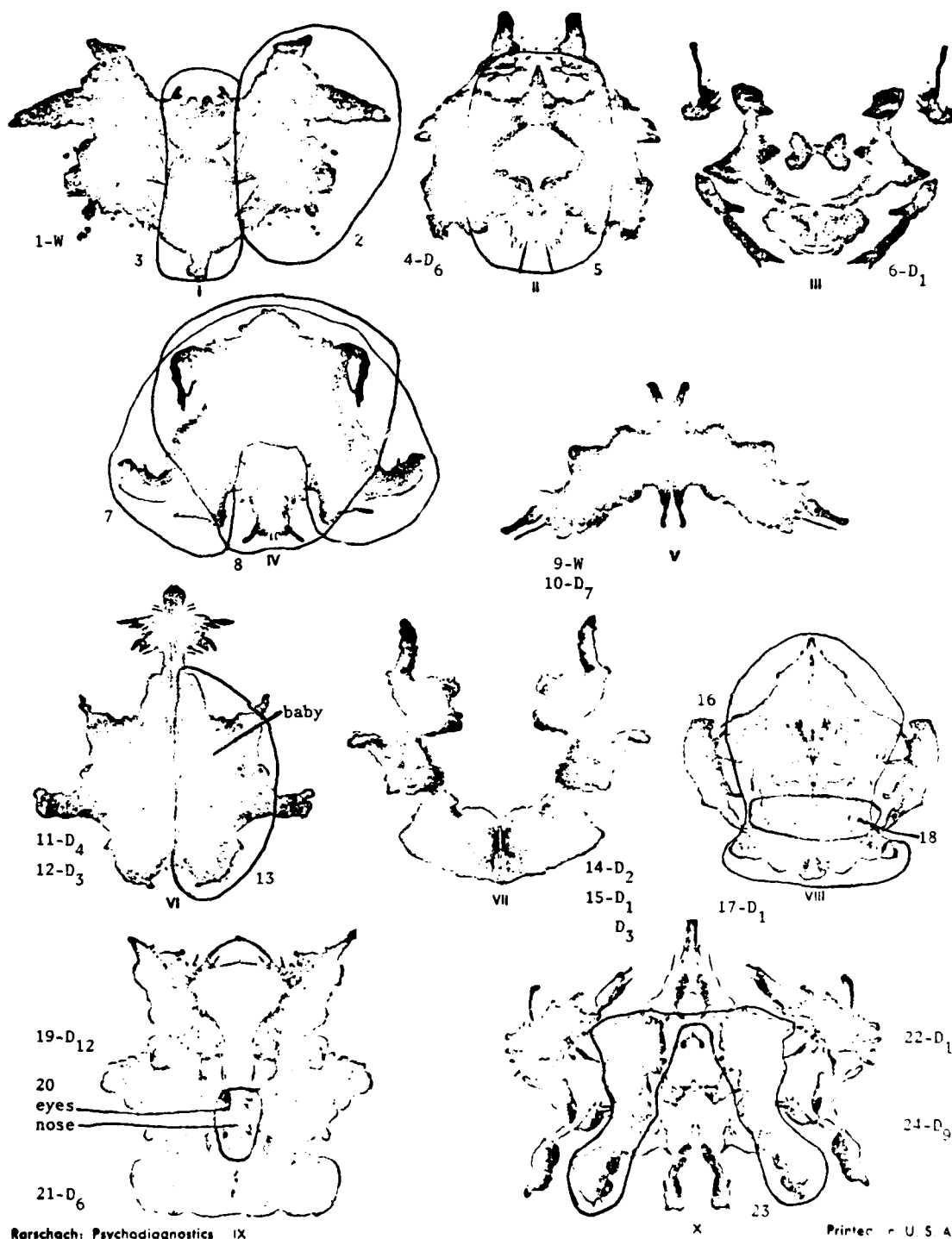
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Abstract

This paper discusses the phases of recovery from closed head injury and the most useful general neuropsychological assessment and management during these stages. The four general phases of recovery are the loss of consciousness/coma, posttraumatic amnesia, rapid recovery and plateau phases. A theory of recovery during the phases is presented which offers a rationale for selecting appropriate assessment devices and interventions. Various instruments and interventions are discussed. Guidelines are presented. Issues relevant to the neuropsychologist in the military medical setting are mentioned.

INTRODUCTION

Recovery from brain impairment depends upon multiple factors (Miller, 1984). Factors include: age; type, extent and severity of lesion; time since injury; degree of overlearning; time since acquisition of skills; the social environment; family support; interventions and their timing; intelligence, personality, motivation, and emotional state. Although patients recover at different rates of time and to different levels, there is consistent evidence indicating rapid recovery during the three to six month period following posttraumatic amnesia. In milder head injuries, recovery can approach premorbid baseline (McLean, Dikmen, Temkin, Wyler, & Gale, 1983). Between six to twelve months, recovery continues at a slower pace. A clear leveling off occurs between the twelfth and twenty-fourth month. Bond (1983) reports infrequent changes in the Glasgow Outcome Rating Scale levels of recovery following the six month post injury period. While there is some evidence that specific functions may continue to improve in some patients for years (Rao & Bieliauskas, 1983), especially with intervention, there is consistent evidence that cognitive and physical recoveries generally follow the six to twelve month pattern (Bond 1975; Teuber 1975; Goodwin 1982; Miller, 1984). This consistent pattern may be related to the physical realities of the brain's



APPENDIX A
LOCATION CHART

SEQUENCE OF SCORES

CARD	RT	NO.	LOCATION	DETERMINANTS (S)	CONTENT (S)	POP	Z SCORE	SPECIAL
I		1	Wo	FM _O ^P	A	P	1.0	
		2	Do	FM _O ^P	A			
		3	Do	FM _O ^P	A			
II		4	D+	FM _O ^P (2)	A		3.0	
		5	Ddo	Fw	Hd			
III		6	D+	Fo (2)	H	P	3.0	
IV		7	Ddo	Fo (2)	Cg			
		8	Ddo	FY-	A			
V		9	Wo	Fo	A	P	1.0	
		10	Do	Mo	H			
VI		11	Do	Fo (2)	Masks			
		12	Do	Mw	H			
		13	Dd+	F-	H, carrier		2.5	
VII		14	Do	Fo	Hd			EV
		15	Do	Fo (2)	Masks			
VIII		16	Ddo	FC-	Cg			
		17	Fo		A			
		18	Ddo	F-	Cg			
IX		19	D+	Fw (2)	A, Cg		2.5	FabCom
		20	DdSo	F-	Hd			
		21	Do	F-	Cg			
X		22	Do	FCo (2)	Bt			
		23	Ddo	FY-	Cg			
		24	Do	Fo (2)	H			

APPENDIX A

SEQUENCE OF SCORES

25. Looks like 2 birds.

E: I'm not sure I see it as you do.

S: You can't see everything, you can't
tell it's really people.

E: RSR

S: I forget now.

(Location could not be determined; not
scored).

APPENDIX A

RORSCHACH RESPONSES

13. Looks like a papoose carrier with a baby in it.
- E: RSR
S: Doesn't look that perfect, take that part off (Dd25), that couldn't be there (Da), baby right here (points) back part of carrier (area near D5).
- Card VII
14. Looks like a boy and a girl.
- E: RSR
S: No distinguishing features, they're made the same to the waist.
15. Looks like 2 masks and 2 masks
- E: RSR
S: The masks here and there. Looks like eyes, nose, mouth, ears here.
- Card VIII
16. Looks like a blouse.
- E: RSR
S: Here the way it's painted and the way the outline is.
17. S.K. or an A but I can't tell what kind. It c.o. a tiger.
- E: RSR
S: The outline of it.
18. A belt.
- E: RSR
S: The shape of it.
- Card IX
19. Looks like 2 deer at the top, l.l. they have dresses on.
- E: RSR
S: The deer to here (D3) and the dress starts here, just the outline.
20. There it l.l. a face.
- E: RSR
S: Just made that image with 2 little white places as eyes, the nose is here.
21. That c b a bow tie.
- E: RSR
S: Here (points to D6).
- Card X
22. Looks like 2 blue flowers.
- E: RSR
S: Just out there by themselves, just l.l. a flower.
23. Looks like a sweater that is open all the way down.
- E: RSR
S: I don't know, it's darker along here (points to D9).
24. Did I say it l.l. 2 people?
- E: RSR
S: These things, they have robes on, the whole body.

APPENDIX A

RORSCHACH RESPONSES

Card I

1. Looks like a bat.

E: RSR

S. ll it has its wings spread, 2 eyes, feelers.

2. Looks l a donkey standing sideways.

E: RSR

S. Donkey here (points to D2) with big ears (points to D8).

3. A dog in the middle.

E: RSR

S. The dog, his feet, dogs ears (points to D1) back legs, it's sitting.

Card II

4. Looks like 2 elephants.

E: RSR

S. Trunk, it's sideways, there are 2, looking at each other.

5. Looks like a man's face.
The man has a beard.

E: RSR

S. Two eyes, nose, this is the beard (points to D3) and outline is (traces with finger)...I guess, four eyes if you made it go high enough, could be 2 faces, noses, eyes.

Card III

6. Looks like 2 people.

E: RSR

S. A shoe, leg, arm, body and head. They have s.t. in their hands. I can't tell what it is.

Card IV

7. Looks like 2 boots.

E: RSR

S. Just l.l. 2 boots.

8. A dog's face.

E: RSR

S. Two eyes, mouth open here, chin. A little darker, lighter here, a little nose.

Card V

9. Looks a little bit like a bf.

E: RSR

S. Just l.l. a bf.

10. Looks like a man standing in the middle.

E: RSR

S. A hat on. Just a man standing there.

Card VI

11. Looks like 2 masks.

E: RSR

S. Here's one (traces outline). A long nose (points to D9).

12. Looks like a body of a person standing at the top.

E: RSR

S. Eyes, nose, mouth, beard, arms straight out, just does.

APPENDIX A

RORSCHACH RESPONSES

- o Avoid making premature predictions of long-term outcome in the early phases.
- o Function as a team member since maximum rehabilitation of the head injured patient requires a multidisciplinary team effort.
- o Tailor interventions to the phase of recovery, the individual, and the various relevant systems.
- o Maintain a balance between promoting rehabilitative efforts and a realistic acceptance of deficits.
- o Avoid promoting false hopes.
- o Recognize the limitations of cognitive rehabilitation while encouraging everything possible to enhance recovery

Additional Guidelines for the Army Neuropsychologist

Most of the concepts and guidelines presented in this paper can be applied by the neuropsychologist assessing and managing closed head injuries in an army medical setting. Mildly closed head injured patients may be able to return to active duty following maximum convalescent leave if close coordination takes place with the commander and the service member is placed on adjusted or well supervised duty. With some patients, there will be some conflicts between what regulations require and the phases of head injury. Regulations may require the patient to return to duty too early. After an active duty patient no longer needs acute medical care or hospitalization, the army physician must either return the patient to active duty within thirty days or proceed with a medical board. Many patients are still in the posttraumatic amnesic or rapid recovery phases at that time and are not able to return to duty although they might be able to resume full duty in two to six months. These patients are typically placed on TDRL status. The neuropsychologist may be asked to prematurely predict the long-term neurobehavioral outcome for medical board proceedings. It is best to make statements about the current functioning of the patient and avoid long-term predictions.

SUMMARY

In summary, there are four general phases of recovery in closed head injury. These are the loss of consciousness/coma, posttraumatic amnesic, rapid recovery, and plateau phases. The closed head injured patient progresses through the stages of recovery at different rates depending on the type and severity

of injury. The progression is related to the interaction of impairments of the higher cortical arousal system and more specific impairments. Although each patient is unique, there are common higher cortical impairments in each phase. Initially, impairments of the arousal system may mask other dysfunctions. Assessments and interventions by the neuropsychologist must be sensitive to the particular phases and tailored accordingly. Procedures which are sensitive to the primary problems of each phase are more useful than the shotgun approach of fixed comprehensive batteries. Comprehensive batteries of neuropsychological procedures are most useful in the plateau phase, but need to be supplemented with procedures which will be sensitive to specific deficits and lingering arousal system dysfunctions. Interventions need to fit the phase of recovery and consider the various environmental systems of the patient as well as the patient. The application of the concepts presented in this paper will help the neuropsychologist deliver more effective assessment and management services to the patients, families and staffs who experience the challenges of traumatically acquired brain dysfunction.

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NEUROPSYCHOLOGICAL ISSUES FOLLOWING CLOSED
HEAD INJURIES IN ARMY SERVICE PERSONNEL

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ABSTRACT

Head trauma is an increasingly common type of injury in the United States. Much of the literature pertaining to head trauma is medically oriented and deals with problems in the acute management of trauma patients. Current research findings, however, offer strong support to the notion that recovery from head trauma involves more than simply recovering from the medical aspects of the injury such as coma or post-traumatic amnesia. Evidence from several sources indicates that following the acute medical phase of a closed head injury (CHI) there is a more prolonged chronic phase of recovery in which the patient slowly regains cognitive and cortical functioning. Of concern in this paper is the return to duty of service personnel during this more prolonged phase of recovery. Specifically, this paper will review current treatment and evaluation strategies employed by AMEDD personnel in the management of an active duty soldier following a closed head injury. In addition, a prescriptive outline, including neuropsychological assessment, will be offered for utilization in determining when a service member is ready to resume full duty status.

INTRODUCTION

Closed head trauma is an increasingly common type of injury in the United States. It is reported to be the leading cause of brain damage in previously healthy young people (Long, 1982; Dikmen, Reitan, & Temkin, 1983). Cognitive and intellectual deficits are common sequelae to these injuries in addition to more obvious physical, sensory and motor impairments. In fact, it has been suggested that cognitive, intellectual and emotional difficulties are more persistent and prominent in terms of disrupting social and vocational functioning than the physical, sensory or motor disabilities sustained from the CHI.

CHIs in service personnel evoke important questions which are often directed at AMEDD personnel. Commanders, charged with the responsibility for the general health and welfare of unit members, are specifically interested in whether or not a head injured service member will be able to resume regu-

lar duties. Consultation with a psychologist may be one avenue used to gain information in this decision making process.

Assessing the status of the service member following a CHI and hence, determining whether they will be able to resume their duties is, however, a difficult task. The difficulty lies primarily in the peculiar recovery process from CHIs, particularly within the chronic or final and more prolonged phase of recovery. During this phase of the recovery process, the service member may appear to be physically recuperated and functional yet remains less than adequate in their functioning due to a host of residual symptoms. Such symptoms include decreased attention and concentration, fatigue, headaches, dizziness, confusion, irritability, language problems, tinnitus, alcohol intolerance and visual disturbances. All of these symptoms may or may not be overtly apparent or clinically obvious.

Since the patient has usually been medically cleared due to the absence of any gross neurological deficits and obvious mental status abnormalities, it has been suggested in the past that such residual sequelae of CHI reflect a psychological difficulty as opposed to a true organic process. Others, such as supervisors and peers, are prone to be even less generous in their interpretation of the head injured service member's dysfunctional behavior. As peers continue in their duties and observe the presumably "healthy" and recovered service member gain exemption from certain duties due to their symptoms, peers are likely to label the patient as "crazy" or poorly motivated and lazy (ie., using their CHI as an excuse to avoid duty). Research literature, however, supports the supposition that these patients are not simply neurotic, amotivated or malingering. Rather, post-concussion symptoms secondary to a CHI appear to reflect a state of cerebral disorganization associated with impairment of higher cortical functions. This article will view mild CHIs and associated post-concussion symptoms from this perspective of impaired cortical functioning. Additionally, a brief review of relevant literature, a description of the current understanding of CHIs, and assessment and management procedures for the chronic phase of recovery will be offered.

BACKGROUND: Mild Closed Head Injuries and Neuropsychological Sequelae

The occurrence of CHI is established by disruption of a person's level of consciousness following a nonpenetrating impact of the skull against some relatively inflexible object. This definition includes cases of simple compression fracture, but excludes all cases of penetrating injury to the brain or compound fractures of the skull (Levin & Peters, 1979).

The immediate observable effects of CHI range from momentary daze, followed by immediate recovery, to prolonged coma ending in death (Smith, 1961). Regardless of how rapidly the recovery occurs, it is an orderly process passing sequentially through identified stages of impaired consciousness (Russell, 1932; Symonds, 1937). Schilder (1934) has provided a description of the initial stages of recovery that remains applicable today. Following a concussion injury of sufficient severity to produce coma, an uncomplicated recovery would proceed from this initial comatose state, with muscular relaxation, to a state of deeply clouded consciousness, with general restiveness marking the end of coma. The second stage, currently described as a period

of post-traumatic amnesia (PTA), is seen as the period following the initial stage of coma in which a patient experiences impaired consciousness with disorientation, bewilderment, and helplessness, proceeding to a phase in which clouding of consciousness disappears while the patient remains amnesic for recent events. The final or third stage of recovery following PTA was described by Schilder as a period associated with chronic impairment of psychological and social-environmental functions and the phase at which emotional disturbances are most pronounced. During this chronic period of recovery, at least 70% of patients will report one or more symptoms characteristic of post-concussion syndrome (PCS). The cluster of symptoms making up PCS includes memory weakness, mental confusion, fatigability, irritability, headache, dizziness, visual disturbance, tinnitus, and alcohol intolerance. Headache and dizziness are the most frequently reported symptoms during the final recovery phase and resolution of these symptoms is associated with the return to asymptomatic levels of functioning (Long, 1982).

Earlier efforts at understanding the emotional and behavioral consequences of CHI focused on the transition from post-traumatic amnesia to either full recovery or to stages in which the patient's behavior was complicated by the presence of a post-concussive syndrome (Jennett, 1967), a psychiatric disorder (Straus & Savitsky, 1934; Thompson, 1965) or physical handicaps. While considerable information has been gathered concerning the behavioral complications of post-concussion symptoms, psychiatric disturbances and physical handicaps during the final stage of recovery, recent interest has shifted toward explicating the role of neuropsychological deficits in this final recovery process (Imes, 1983; Sbordone 1984). This is especially true as it applies to the long-term adjustment of a CHI patient (Lowery, Engelsmann & Lopowski, 1973; Miller, 1979).

Most CHI treatment programs fail to recognize the presence of subtle tissue damage and the resulting, often less subtle, impairment of higher cortical functions. Taylor (1967) supports this point by noting that the investigation of the concussed patient often stops with the termination of the neurological exams and skull x-rays. The treatment prescribed most often at this time consists of bed rest until the patient is well enough to get up and return to work. While the patient may have made a good physical recovery and may feel well enough to return to work, the presence of impaired higher cortical functions may contribute to fatigue, mood disturbances and a variety of other post-concussion symptoms including perplexity and distractability (Lezak, 1978).

Recognizing this problem, Lewin (1968) maintained that rehabilitative programs should begin to be active immediately following the injury and continue throughout the entire recovery process. Unfortunately, most treatment programs in the United States and also typical military management procedures for the CHI patient generally provide intense care during the acute recovery stage but leave the patient to their own devices in regard to coping with the deficits in higher cortical functioning that may persist for months or even years following recovery from post-traumatic amnesia. Without professional guidance during this important phase of recovery, such patients are likely to make futile attempts at returning to their premorbid lifestyle. This generally results in unnecessary frustration and loss of self-esteem, and these patients also run the risk of incurring significant work and family

problems. A potential result that is not infrequently seen in these patients is that failed job and family integration results in the adoption of a chronic invalid status. At this point, full recovery is seldom seen.

While little is yet known about this final phase of recovery, recent literature indicates that impaired cortical functioning continues beyond the identifiable phase of post-traumatic amnesia and preceeds the phase of full recovery. Zangwell (1966) found that minor intellectual disorders persisted in patients following apparent recovery from post-traumatic amnesia. Taylor (1966) stated that head trauma patients have minor difficulties in concentration and performance which irritate them and make them behave in an unusual manner. He concluded, however, that these patients were not "neurotic", rather they were "cerebrally disorganized". He further pointed out that such cerebral disorganization arises from underlying organic factors that may or may not be documented by traditional neurodiagnostic procedures (ie., EEGs, CT scans, etc.).

While traditional medical procedures cannot generally be used to support the organic basis of neuropsychological deficits in mild head injured patients, the work of Jane and colleagues (1982) with primates provides a basis for assuming such impairment is the result of underlying organic disturbances. These researchers subjected monkeys to rotational acceleration of the head sufficient to produce loss of consciousness (an experimental analogue of CHI) and found evidence of axonal degeneration throughout the brains of these animals. Their results suggest that even in cases of mild head injury, structural abnormalities may be present to account for the neuropsychological deficits evidenced after the concussion. Others (Ommaya, 1971; Ommaya & Gennarelli, 1974) have also clearly demonstrated that there is diffuse microscopic destruction of neural tissue following cases of mild head injury and simple whiplash.

Long and Gouvier (1982) studied 200 patients suffering from head trauma and they found that only 28% of these patients classified as suffering mild head trauma had abnormal EEGs and only 27% had abnormal CT scans. In marked contrast, however, these same patients revealed a strikingly different picture upon neuropsychological assessment. Neuropsychological test results showed that fully 78% of these patients had definite demonstrable cerebral dysfunction or substantial weaknesses in higher cortical functions. These findings suggest that these patients had not, at the time of assessment, returned to a stable level of functioning. In contrast, when patients suffering severe head trauma were evaluated, 70% were found to have abnormal EEGs, 36% had abnormal CT scans, and 90% were impaired on the neuropsychological evaluation. The data of Long and Gouvier provides support for Taylor's supposition of "cerebral disorganization" in patients with head trauma. Fuld and Fisher (1977) and Klonoff, Low and Clark (1977) also reported similar findings with head trauma patients indicating that impairment in cortical functioning remains long after more obvious symptoms and in the absence of documentation from more traditional neurodiagnostic procedures.

In a recent study that employed the Halstead-Reitan Test Battery as a means of determining neuropsychological status, Barth (1983) found that a significant number of patients with minor head injuries demonstrated mild impairment on the battery 3 months post injury. Rimel (1981) has also noted a high incidence of disability, primarily unemployment, in a great many patients with mild head injuries who appear to be functionally adequate.

Moreover, these patients reported a high incidence of post-concussive symptoms. Interestingly, the incidence of all post-concussive symptoms, except alcohol intolerance, appears to be much greater among mild CHI patients in comparison to more severely injured patients (Long, 1982). Any conceptual model of recovery should quite obviously be required to account for this frequently observed relationship between severity and reported symptoms.

In sum, the research evidence indicates that when patients are evaluated using neuropsychological assessment procedures following minor head injuries, many of these patients are found to have significant neuropsychological deficits and manifest concurrent adjustment failures, emotional difficulties and other post-concussive sequelae. While it is true that most of the post-concussive sequelae will typically resolve within six to twelve months post injury, the presence of such sequelae may in fact be the hallmarks of impairment in higher cortical functioning. Moreover, the presence of cortical dysfunction certainly attenuates a patient's capacity to function effectively and as such interferes with an individual's ability to perform satisfactorily on the job.

The phase of impaired cortical functioning needs to be objectively evaluated as the effects on the patient during this period are subtle to the casual observer. It is, in fact, these subtle deficits which negatively influence the patient's ability to resume normal functions under demanding circumstances. For example, Erving, McCarthy, Gronwall, and Wrightson (1980) demonstrated that mild physiological stress (simulated hypobaric altitude of 3800 feet) can reveal memory and attention deficits in CHI patients who have ostensibly made a full recovery.

One explanation for the greater occurrence of post-concussion symptoms among mild head injured patients has to do with the fact that they feel they have fully recovered due to their adequate physical state and so attempt to return to work. As the demands of their work environment exceed their diminished functional capacity, stress increases beyond their effective coping levels and secondarily contributes to emotional problems and distress. One could assume then that the impaired cortical functions phase presents the patient with a dual problem: a) it provides a basis for increased stress and b) it impairs the patient's coping strategies.

Several conclusions may be drawn from the above information regarding CHIs and the recovery process. First, there appears to be a chronic phase of impaired cortical functions which follows the period of PTA that can be demonstrated with neuropsychological assessment. Second, there appears to be a positive correlation between the degree to which patients are impaired on these tests and their difficulty in resuming normal functioning. Third, among mildly injured patients, significant impairment on neuropsychological measures is associated with a greater number of post-concussive symptoms. Finally, effective assessment of coma, post traumatic amnesia, and impaired cortical functions may yield relationships which can be used to predict the degree and rate of a CHI patient's recovery. These data may also be useful in the formulation of a rehabilitative strategy that is based on knowledge of the patient's level of functioning and pattern of strengths and weaknesses.

Assessment and Management Procedures of CHIs

As suggested above, the patient's compromised cognitive skills and coping strategies contribute to the high levels of tension, self-doubt and frustration as the patient attempts to function at their premorbid level. It is during this phase of the recovery process where the production of "neurotic" symptomology associated with the PCS is likely to occur. Also true, however, is that such difficulties will be further increased in those patients whose premorbid adjustment was impaired or inadequate. CHI patients in this chronic phase should be carefully evaluated with regard to cortical functions and this information should be employed in making decisions pertaining to their return to duty. A program of management, including comprehensive assessment, should be instituted early in the course of treatment. Such a program should include explanations regarding symptoms and prognosis directed toward the patient, their family, command, supervisors, and potentially peers. In addition, the program should include a careful rescheduling of behavior which precludes a premature return to full duty while the patient's cognitive functions remain compromised. Instead a gradual, stepwise, and monitored return to duty that prevents unnecessary frustrations, fatigue and stress will enhance the soldier's potential for a full recovery. In the absence of the above plan, it appears likely that many such individuals with HI will continue to become chronic patients.

It is clear that returning CHI patients to duty once medically cleared without ascertaining their level of neuropsychological functioning places both the patient and command in a precarious position. While the patient remains cognitively impaired, they are not likely to function adequately and this may prompt undue administrative action by command (i.e., initiation of separation, reduction in rank, etc.). It is the contention of this paper that all CHI patients should routinely receive a screening and evaluation by a clinical psychologist who is trained in the administration and interpretation of neuropsychological tests. It is then incumbent upon the Psychology Service to act as liaison and advocate as well as therapist and diagnostician. Initial intervention efforts should be devoted to educating command, families, and the patient as to the nature and the probable course of recovery.

The Psychology Service may be quite helpful in modifying counter-productive behavior of command, family and peers, as well as developing realistic expectations for the patient. In addition, the psychologist may be instrumental in changing the patient's duty environment so that the demands it places on the patient will be controlled in a manner that prevents excessive stress. Neuropsychological assessments have proven extremely helpful in determining which tasks and demands will be most difficult for the patient and it has been the experience of the authors that command is most receptive and appreciative of the input and direction from the Psychology Service. It should be noted that the psychologist must strike a delicate balance between excusing the patient from difficult duties and making needed modifications in the patient's duty requirements since these actions may differentially reinforce negative "invalid" or positive "recuperating" notions or labels for the patient.

While it is recognized that some patients will present a need for medical separation due to the extent of injury, this is seen as a final management option. This is surely a costly option, both in terms of the emotional and social status of the patient and the financial considerations incurred by the military. Again, it is the contention of this paper that all CHI patients be routinely evaluated to aid in return to duty determinations or medical separation actions. One possible alternative to immediate separation or re-

turn to duty is TDRL status with certain modifications (eg., placement in a VA medical center for cognitive rehabilitation and retraining). Without specific placement in such treatment programs, TDRL may in fact be no better than medical hold or bed rest.

The above description of CHIs, management and assessment recommendations are offered as initial efforts based on preliminary research and current clinical experience. It is expected that routine assessment will provide increased information regarding the nature and status of CHI patients. Openness and flexibility to new treatment options and recommendations is a final consideration.

Assessment of the CHI Patient

The following prescriptive outline is suggested for assessment of the patient from hospital admission to a six month to one year interval following return to duty. The assessment instruments suggested are ones that will allow systematic, repeated evaluation of the patient as they progress through the period of coma, post-traumatic amnesia, and impaired cortical functions to their end point in the recovery process.

During the initial stage of coma following the injury, the Glasgow Coma Scale (GCS) is suggested. Of the existing objective techniques to assess coma, the most widely used is the GCS. Although not perfect in all respects, the GCS is a familiar means of communicating information regarding head injured patients.

During the post-traumatic amnesia stage a test which appears to be effective is the Galveston Orientation and Amnesia Test. Characteristically, assessment of the end of the post-traumatic amnesia phase has been based on a retrospective clinical judgment about the patient's return to continuous memory and awareness. This judgment, being unstandardized, has inherent elements of unreliability. To overcome these problems, different scales attempting to assess disorientation have been developed. The most fruitful of these approaches appears to be the Galveston which is specifically designed for the assessment of post-traumatic amnesia duration following head trauma.

During the final phase of recovery, marked by impaired cortical functions and post-concussion symptoms, a number of objective assessment devices are currently available. A battery of neuropsychological tests is recommended to assess higher cortical functions and psychological status which will aid in tracking the patient's recovery. Such a battery should allow for the assessment of multiple functions including psychosensory, psychomotor, visuographic, perceptual organization, expressive language, receptive language, higher cognitive skills, as well as emotional integrity. It is hoped that such information will provide valuable objective data to be used in making early decisions with regard to the severity of injury and eventual degree of recovery. Furthermore, such data would be useful in determining the patient's rightful return to duty. Finally, such data may be of value in planning and implementing rehabilitative strategies on the basis of documented weaknesses and strengths. Assessment of neuropsychological status may be accomplished utilizing either the Luria-Nebraska or Halstead-Reitan Batteries. The Minnesota Multiphasic Personality Inventory, The Millon Behavioral Health Inventory, and the Beck Depression Index are suggested for assessment of psychological status.

While a complete neuropsychological evaluation is suggested at the onset of the final recovery stage, repetitions of selected tests on which the patient demonstrated specific difficulty may prove useful in monitoring recovery. A complete reevaluation is recommended at six and twelve months following the final stage of recovery or as proves necessary. Cognitive stimulation efforts developed by the psychologist should be instituted during this phase of the recovery process as well. Rehabilitative strategies will, of necessity, be individually designed based on a patient's particular needs (Carberry & Burd, 1983; Musante, 1983).

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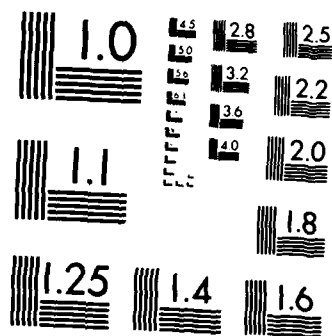
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Measuring psychopathology: An alternative to the MMPI

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Abstract

A brief history of the development of objective tests of psychopathology is presented. A new instrument, the Basic Personality Inventory (BPI, Jackson, 1976), is described. Its method of construction is outlined and its psychometric properties are contrasted with the MMPI. Data regarding factor structure, reliability, and preliminary validity are presented. Finally, the experimental use of the BPI with a military population is discussed in light of the shortcomings of the MMPI.

Measuring psychopathology is an integral part of the work performed by the clinical psychologist. It is this very activity that distinguishes clinical psychologists from other helping professionals (i.e., social workers or psychiatrists). While World War II is generally credited with accelerating the growth of diagnostic psychological testing, concern for the evaluation of others extends back to World War I, in America, or as far back as in the ancient Chinese empires (Lanyon and Goodstein, 1970; Wiggins, 1973).

In the present paper, the authors intend to trace the history of objective testing for psychopathology. In so doing, emphasis is placed on the method of test construction employed and the particular assumptions underlying individual items. Once completed, the authors present the Basic Personality Inventory (BPI, Jackson, 1976). The method of test construction and available research literature are presented.

Modern approaches to personality test construction trace their lineage to World War I. At that time, Woodworth (1917) undertook the task of creating a more cost-effective screening device for draftees. His intention was to replace the standard psychiatric interview with a paper-and-pencil measure which would, it was believed, achieve the same goal - differentiating fit from unfit soldiers. The instrument developed was the Woodworth Personal Data Sheet (Woodworth, 1917).

The Woodworth Personal Data Sheet was an inventory that was designed to measure such characteristics as neurotic tendencies, psychosomatic proclivities, and the like. Some basic assumptions of this phase of test construction were the following: (1) Both the test constructor and the testee had similar understandings of the item content. They shared the same understanding of the way words were used; (2) The next assumption was based on the belief that individuals were capable of accurately assessing their own internal states. Thus, it was believed that the soldiers were "self-aware" and capable of accurately reporting such states by their responses to the items; (3) Another assumption was that people would "honestly" report their feelings, experiences, and the like. (4) Finally, it was believed that there was close "correspondence" between what the individual reported and what the test was intended to measure.

The particular assumptions that fostered the development of the Woodworth Personal Data Sheet coalesced to form the basis of the "content" orientation of personality test construction. Though well intended, this undertaking was rather naive. The many assumptions that buttressed this approach to test construction are the very same ones that led to its speedy demise. Specifically, there was no way of knowing if the test constructor and his/her's subjects shared similar meanings to the manner in which items were evaluated. In fact, many of the conscripts were European immigrants who were, in most cases, unable to speak English. A second major criticism of this approach was that it was also impossible to accurately assess the extent to which an individual was capable of monitoring his/her internal states. This ability to monitor internal states is very much related to the next issue - the ability (or willingness) of individuals to "honestly" report their experiences. The idea of being aware of one's own internal state and the likelihood of being forthright about such experiences was suspect, as falsification and manipulation went uncontrolled.

As can be readily observed, there are noticable shortcomings with this early method of test construction. However, as Jackson (1974) indicated, several positive aspects need to be considered. First, by writing items it was possible to create verbal samples of everyday behaviors. Hence, a variety of items could be written which would reflect many different aspects of personality. Second, the creation of items was based on objectivity (i.e., items with a fixed scoring possibility) as opposed to more projective ones. Researchers were placed in a position to replicate the findings of their colleagues. Finally,

Jackson indicated that the creation of such items made it possible to employ statistical methods to evaluate their usefulness in measuring personality. As will soon be evident, the shortcomings of the content-oriented Woodworth Personal Data Sheet and Jackson's observations on the introduction of items as behavior samples affected later developments in personality test construction.

The second phase of personality test construction differed markedly from the preceding one. Here the emphasis was on the reliability of tests, as well as the prevalence of response sets. The major proponents of this new approach to test construction were Strong at Stanford University and Hathaway, McKinley, and Meehl at the University of Minnesota. The foundation of this approach to personality test construction was atheoretical, or as it came to be known - Dust Bowl Empiricism.

The empirical approach differed from the content-oriented perspective in that the manifest meaning of the test items was assumed to be of little or no importance in constructing a valid test. Therefore, this approach was unconcerned with the actual item content. Rather, the focus was on the different behaviors to which an item might be correlated. Hathaway, McKinley, and Meehl believed that (1) there was no way of knowing whether subjects and test constructors shared similar meanings for experiences or behaviors, (2) there was little probability of individuals accurately assessing their own internal states, (3) there was a diminished probability that individuals would honestly report their experiences, especially as the previous personality test (Woodworth) illustrated how easily it was to intentionally distort one's responses to a personality test, and (4) these researchers believed that it was unnecessary to be concerned with the presumed correspondence between what a test purported to measure and the individual's awareness of it. Rather, what was most important was that the individual's responses be correlated with some external criterion.

The way in which the empirical approach was applied to construction of a test of psychopathology was to contrast the responses of a target (abnormal) group with a (normal) criterion group. Only those responses (test items) that accurately differentiated the target group from the criterion group were retained on the appropriate scale. This approach represented a unique way of constructing a personality test. It was presumably immune to distortion or faking because individuals were unaware of the external correlates to which the items had been contrasted.

The third major influence on personality scale construction was ushered into prominence by the concern for such issues as construct validity, convergent and discriminant validity, response distortions influencing test-taking, and the impact of computers on handling large chunks of data. Of particular importance with regard to the third phase of personality test construction was the research of Jackson (1967; 1976), who

developed a sequential strategy for scale construction which addressed these issues.

Construct validity in test construction has become an important issue. In contrast with a simple empirical approach, the researcher concerned with construct validity attempts to develop scales that measure somewhat abstract personality traits such as defensiveness, self esteem, etc. These "constructs" do not have an obvious and readily identifiable correspondence with a set of behaviors or other criteria. The usefulness of such constructs in measuring psychopathology has been and remains a matter of debate in clinical psychology. However, the use of hypothetical constructs in a test of psychopathology places a burden upon the researcher to demonstrate in multiple ways how that construct is related both to actual behavior and to other variables with which it might logically be correlated.

Cronbach and Meehl (1955) delineated several ways in which the construct validity of a given variable could be achieved. At a basic level, construct validity requires that a given variable correlate appropriately with changes in development over the life cycle. Another method of establishing construct validity is through contrasting groups that should theoretically or logically score differently. Next, one could illustrate differences in the relationships among similar and disparate variables. Toward this end, it was necessary to demonstrate patterns of relationships among variables that reflected both high and low correspondence (Campbell and Fiske, 1958).

The idea of delineating related variables from unrelated ones became a cornerstone of research on convergent and discriminant validity. Good experimental design required that researchers specify beforehand which variables would converge (i.e., correlate) with one another and those that would not.

With regard to the issue of response distortions research has been conducted by Messick and Jackson (1958) and Jackson and Messick (1961) in a series of investigations on the MMPI. These researchers factor analyzed the MMPI item content and evaluated the keying of items on the two primary components, A and R. On the first dimension, Jackson and Messick examined the number of responses that were answered in the keyed direction. This analysis led the researchers to suggest that "Acquiescence" was being primarily elicited from the first factor and not the content envisioned by proponents of the MMPI. In comprehensive evaluations of the MMPI and a social desirability scale created on the basis of the MMPI item pool, Edwards convincingly demonstrated that the tendency to respond to the items in socially desirable ways, and not acquiescence, was the essential composition of the first factor. He indicated that factor R appeared to have some relationship to the notion of an acquiescent response style.

Finally, the role of the computer in this third phase of

personality test construction is unprecedented. It ushered in the possibility of conducting item-level statistics. To be sure, with the ability to perform complex computations in miniscule bits of time, it made the task of the personality test constructor considerably easier. It became possible for researchers to investigate the convergent and discriminant validity of personality test items rather than just the scaled scores.

In summary, personality test construction underwent three distinct phases. Culminating from these were specific approaches to personality test construction: Intuitive-Rational, Intuitive-Theoretical, Internal Consistency, and Empirical Criterion-Keying. As will become evident below, the development of the Basic Personality Inventory attempted to capitalize on the strengths of the preceding forms of test construction.

On the basis of the merits and shortcomings of the preceding phases of personality scale construction, Jackson (1970) devised a sequential strategy to devise a new test of psychopathology. Four essential principles comprise this approach to personality scale construction. First, Jackson asserted that it was necessary to employ a particular theory to guide the development of an instrument. It so doing, it became possible to study variables that were meaningful and ones with relevance to important aspects of personality. Theory was also important because it forces one to be rigorous in the way variables are studied. It compelled researchers to be explicit about the traits intended to be measured and to specify any unrelated ones.

The second principle of this strategy was the need to minimize the influence of response distortion. Earlier research identified social desirability and acquiescence as sources of error variance in personality testing. Jackson (1970; 1971; 1974) argued that these factors need to be curtailed. If not, he indicated that it was likely that correlations would be spuriously high in relation to other scales, thus submerging the amount of true variance associated with the content of a given scale.

The third principle involved creating scales that were content saturated, or homogeneous. This is accomplished by making certain that the items on a given scale were more highly correlated among themselves than with another set of items or scales in the same inventory. Where items were more highly correlated with other scales, Jackson indicated that they should be discarded.

Finally, the fourth principle involved establishing the convergent and discriminant validity of personality measures. The emphasis was placed on demonstrating the relationship between the particular personality variables selected for study with others that are already in existence. Jackson argued that it was essential to demonstrate, where appropriate, how two different

instruments measuring the same construct were related to one another. On the other hand, it was also necessary to illustrate that certain other variables were not related to the particular one selected for investigation.

The Basic Personality Inventory (BPI, Jackson, 1976) is a 12-scale, 240-item, true-false measure of psychopathology. It was constructed by Jackson to be used in clinical and counseling settings. The development of this instrument was predicated on the need for a more modern, psychometrically sound, and more clinically sophisticated alternative measure of psychopathology. The 12 constructs measured by the BPI are the following: Hypochondriasis, Depression, Denial, Interpersonal Problems, Social Deviation, Persecutory Ideas, Anxiety, Thinking Disorder, Impulse Expression, Social Introversion, Self Depreciation, and Deviation.

The dimensions of the BPI were derived following extensive item-level analyses of the MMPI and the Differential Personality Inventory (DPI, Jackson and Messick, 1971). A component analysis was performed on the MMPI items and a forced orthogonalization of the scales was also done. According to Hoffman, Jackson, and Skinner (1975), this transformation eliminated the problem of item overlap, a major shortcoming of the MMPI. Next, the DPI underwent a component analysis. An eleven factor solution was forced, accounting for approximately 78 percent of the total variance. These higher order DPI factors became the hypothesized dimensions of the BPI. Finally, the MMPI scales and the eleven DPI factors were then intercorrelated. Eleven factors were extracted and underwent a varimax rotation. Table 2 lists the factors and their respective loadings.

The items that comprised each of the eleven DPI-based factors and became the essential dimensions of the BPI were then subjected to a minimum redundancy item analysis. The purpose of this procedure was to maximize the ratio of relevant item-factor score correlation to the sum of the squares of the irrelevant item-factor score correlations (Jackson, 1974). Once the extraneous items were removed, the retained items underwent some revisions. There was concern for keeping the length of items brief, ensuring that the items did not overlap with the DPI, and to ensure that the items substantially reflected the construct on which they were keyed. An equal number of positively- and negatively-keyed items were included to reduce the potential influence of acquiescence. An additional scale, Deviation, was also included. Items that comprised this scale reflect a variety of pathological behaviors which did not fall under the rubric of a general construct.

Measurement of the internal consistency, temporal stability, and item-factor structure of the BPI are reported to be favorable. Item reliabilities were calculated by Reddon (1980), Holden, Burton, and Conley (1981), Holden, Helmes, Fekken, and Jackson (1981), and Holden, Helmes, Jackson, and Fekken (1981). These studies indicated that substantial item-scale reliabilities

existed. These data are presented in Table 3. Investigation of the test/retest reliability over a 4-week period by Holden, Helmes, Fekken, and Jackson (1981) and Kilduf and Velicer (1984) were equally favorable (see Table 4).

Item factor structure of the BPI was evaluated using normal adults, psychiatric inpatients, and high school students (Holden, Reddon, Jackson, and Helmes, 1981) and random data sets of comparable sample size. These data were then intercorrelated, subjected to principle component analyses, and then rotated to target matrices. Table 5 lists mean absolute factor loadings for keyed and non-keyed items for each of the three samples. Table 6 lists the number of items loading in their keyed direction in the rotated matrices.

The validity of the BPI was investigated in three studies. Jackson (1975) performed a multi-method factor analysis of the BPI using individual self-report, peer-rated responses to the BPI, self-adjective ratings, and peer-adjective ratings. The data demonstrated substantial convergent and discriminant validity of the BPI scales. These data are presented in Table 7.

Holden, Helmes, Jackson, and Fekken (1981) evaluated the BPI's effectiveness in predicting placement in diagnostic categories. Correct classification occurred in 33.2 percent of the cases; this value exceeded the amount associated with chance factors alone, 14.3 percent. Govia, Fagan, and Rossi (1984) used the BPI to determine whether three separate substance-abusing groups could be differentiated. Although only two of the scales, Interpersonal Problems and Social Deviation, differentiated the groups of substance abusers, correct classification by treatment facility was approximately 77 percent, more than twice that attributed to chance, 33 percent. One note of caution about the findings of Govia et al. was that the sample size was limited (N=72).

On the basis of the review of the psychometric properties of the BPI, there is evidence to suggest that many of the pitfalls associated with the MMPI have been controlled. The BPI possesses sound internal structure and temporal stability. There is also notable convergent and discriminant validity of the items. Finally, the results are promising regarding the BPI's ability to correctly classify subjects. What remains to be seen are the pros and cons of using this instrument in a military population.

The BPI clearly must be classified as a very new instrument. It lacks the extensive validation literature that exists for the MMPI, after which it was modelled in some ways. However, there are cogent reasons for beginning to use the BPI with the military population either as an adjunct to the MMPI or eventually as a replacement.

The primary technical value of the BPI over the MMPI lies in the careful approach to test construction. The difficulties of the MMPI with regard to its psychometric properties are well

known. Obsolete items, item overlap among scales, high inter-scale correlations and other technical difficulties cause confusion with clinical interpretation. These problems also make research with the MMPI complex and tedious. The BPI represents an endeavor to avoid these pitfalls.

It might be noted at this point that technical improvements are nice but validity is paramount. How valid and useful is the MMPI in a military population? Bloom (1977) reported significant differences in mean scores for a sample of USAF recruits in comparison to the standard MMPI norms. Parkison, Waddell, and Fishburne (1982) and Fishburne and Lockwood (1982) reported major differences between standard norms and the means for a normal Army population. Age differences were also apparent. For example, on scale 9 (Hypomania) 35% of the normal Army sample scored above 70-T. Younger service members were especially prone to receive higher scores (10 - 20 T-score points) on scales F, 4, 6, 7, & 8 as well as 9.

In response to these exaggerated profiles, clinical lore has arisen among military psychologists by which "arm-chair adjustments" in the scores of normally pathological profiles have attenuated usual interpretations. Such tendencies may have accounted for the finding by Parkison, Klusman, Fishburne, and O'Mara (1982) that highly experienced Army clinicians demonstrated only modest "hit rates" in classifying normal and abnormal inpatient schizophrenic profiles.

There have been laudable attempts to overcome the shortcomings of the MMPI, notably in the publication of normalized T-scores by age and I.Q. Use of such norms is warranted. However, the configural interpretation of the resulting profiles may not be the same as the interpretation of current standard configurations. Ironically, the use of new norms may require a major re-learning of MMPI interpretation.

Cataloging the deficiencies of the MMPI should not translate automatically into wholesale adoption of the BPI. This instrument requires much research before it can stand alone. Besides the obvious question of diagnostic accuracy, there are issues regarding individual scale score distributions, means and standard deviations for a young military sample, and ability to control for response set, to name a few. Nevertheless, the instrument shows enough promise as an objective measure of psychopathology to begin to develop a data base for the military population and to conduct validation studies to ascertain its usefulness. It may be no more difficult to research this instrument than to investigate the usefulness of a newly normed MMPI. It may prove more valuable in the long run.

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Improved Selection Procedures for Intelligence Services: The Issues and Guidelines

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Abstract

A traditional domain within the military for the psychologist has been the area of selection and classification of personnel. As the variety or unique characteristics of a units mission increases, selection becomes more critical, that is, as the costs of failure escalate, the importance of effective personnel selection, of matching the soldiers to the critical task increases, probably exponentially. In order to do this, the psychologist must stimulate and assist operational planners to define the critical tasks and criteria for performance. Such clarification in turn refines the organization's objectives and allows them to choose an appropriate selection strategy, and develop predictive algorithms. As the probability of selecting an appropriate individual for a given mission increases, so does the probability of successful mission accomplishment. The principles and guidelines outlined here may help in the development of a coherent selection strategy.

Introduction

Psychological screening of candidate for assignment to high risk jobs in the Intelligence and Security Command serves many useful functions. The organizations ability to identify individuals at the entry level who may not be suited for the peculiar stresses associated with intelligence operations saves valuable time and organizational resources. Likewise, preventing the misuse of information or equipment due to the inherent stress of the job may be possible through the application of pre-selection screening techniques. The usefulness of psychological screening as a tool for predicting future job performance has been demonstrated by its ability to provide valuable information about individual's vulnerabilities, controllability and decision making style that are not assessable during the standard interview and clearance procedures. However, the validation of such selection models is difficult to accomplish for a variety of reasons.

Purpose

The purpose of this paper is to identify the major problems and prospects for the development of a psychological assessment programs for the selection of personnel within the intelligence community.

All psychological screening batteries for selection must stand the test of scientific validation to insure the decision makers are well informed as to the probabilistic nature of their decisions. Developing the relationship between the subjects' test responses and the criterion performance is crucial for the determination of the selection batteries validity. However, this depends on the development of task relevant criteria i.e. attrition, injury, subsequent performance deficiencies, etc. The decision model or risk analysis can then be designed to quantify, for the decision maker, the array of possible outcomes and the risk of unfavorable results associated with each. This type of informed decision making will not provide for perfect decisions, nor eliminate errors, but the process will minimize the degree to which we are taken by surprise and create a selection program that is self-corrective. The purpose for the development of such a selection instrument is not to be always right, but to optimize the organizations ability to respond to changing mission demands.

However, a major issue for the intelligence agency is whether psychological screening should be conducted at all. Some see it as an unnecessary invasion of privacy, and an expensive luxury designed to produce more difficulties in the recruitment and selection of special operations personnel. Some psychologist have even argued that the validation evidence in support of such screening is not sufficient to justify widespread use nor the added time quired for such testing.

On the other hand, the recent rash of "unfit" officers, and several negative incidences suggests that the use of psychological testing can be cost-beneficial to the organization dealing with individuals serving in high risk situations. Likewise if future negative incidents do occur, we do not run the risk of beings accused of having an incomplete screening battery because we neglected the psychological consideration in our evaluation. In a recent court case (Bonsignore vs City of NY, 1982) psychological testing was considered an essential and relatively inexpensive method that could help to assure that "unstable" individuals would not be employed. However if psychological testing is to be used for this purpose. Standards and evaluation of the selection program must be accomplished.

Guidelines

The prospects for developing such an assessment battery requires that we specify guidelines that will give some structure for the programs evaluation.

1. Psychological screening cannot be the sole or sufficient basis for non-selection, other evidence or data must support a negative psychological evaluation.

It appears that professional attitudes toward paraprofessionals, the changing levels of training and maturity of the 9IG, and the lack of preparation provided in the graduate training program to prepare professionals to supervise paraprofessionals result in "hit or miss" programs of supervision for 9IGs.

Paraprofessionals in Mental Health Programs

Concurrent with the development of paraprofessional training models has been the development of supervisory models for professional psychologists (Supervision in Counseling II, 1983). Emerging trends suggest that supervision is a developmental process for beginning counselors. Heppner and Roehlke (1984, p. 87) state that:

"... supervisory behaviors which correlate with trainees' satisfaction with supervision progressed along what appears to be a skill acquisition dimension - that is, from developing intake skills (beginning practica students) to alternative conceptualization (advanced practica students) to examining personal issues affecting therapy (interns)."

While 9IGs should not be compared to beginning graduate practica students, it is interesting to note that a similar pattern is suggested for paraprofessional development. McPheeters (1979, p. 155) indicates that close supervision of new employees was important to teach the paraprofessional skills which they had not been taught in pre-service training or those skills which they had not fully mastered. Paraprofessional programs identified as effective (Alley, Blanton, Feldman, Hunter & Rolfson, 1979) suggest a systems approach to supervision. These programs are characterized by formal training for entry level jobs, orientation for new paraprofessionals and clearly established roles for supervisors and supervisees. They define a system as an orderly combination of a set of component parts (subsystems) which when combined produce a definable outcome or product. In examining supervision from their perspective, one views the supervisee within the context of the larger system in which he/she functions, as well as within the context of his/her own intrapersonal subsystems. When evaluating dynamics or other specific behaviors of the supervisee, Curtis and Yager state that one must do so in the context of the supervisory subsystem as a component of a larger system, including the pre-service training program and the support network within the community at large. Thus, within their approach to supervision, they have identified the component parts of supervision and established the interrelationship among these parts.

The Curtis and Yager approach to supervision appears particularly promising for military health professionals supervising 9IGs because it affords a framework wherein identified components of the supervisory process can be systematically applied to maximize patient care and supervisee growth and development. While this model is in no way in its final form, it does offer some structure for further development. What follows is a description of a systems model for supervising 9IGs.

Proposed Model for Supervising 9IGs

The supervisor establishes a relationship with the supervisee (Subsystem 1, see Figure 1, Supervisor's Flowchart). This activity includes an orientation to the basic rules, policies and procedures of the agency, as well as

Comment

The new 15-week Behavioral Science Specialist training program is superior to the program it replaced. The training is more accurately oriented to the tasks expected of a 91G. In addition, the course design programs far more interaction between instructors and students and among students. This greater use of large and small group discussions and the increased emphasis on experiential learning helps students to acquire and synthesize more information and develop a better working knowledge of applied theory and practice techniques.

We believe the new program represents a significant advancement in the quality of training, and we are committed to its continued development. As supervisors of 91Gs, your assessment of training effectiveness is most relevant. We welcome and encourage your input to the ongoing evaluation and refinement of the program.

Supervision

Although the Behavioral Science Specialist Program (91G10) was established in 1947 (Rooney & Mason, 1952), very little information is reported in the literature on the supervision of these paraprofessionals. In fact, there are only six professional papers (Rooney & Mason, 1952; Monahan, 1960; Kagan & Cooke, 1970; Blumberg, 1971; Trick, 1971; and Garber & O'Brien, 1977) which address the training program for 91G10s.

One reason for the lack of critical scrutiny of the supervisory process for 91Gs is embodied in the mental health professionals' ambivalence about what their role is. Garber and O'Brien (1977, p. 60) best characterize this dilemma when they state that:

.... We have called them case aides, paraprofessionals, sub-professionals and a host of other titles. We have credited them with offering the solution to the manpower needs of the profession and with possessing expertise by virtue of their life experience and social origins not accessible to "professionals". We have seen them as a threat and as a promise. But no matter how many taxonomic schemes we produce, they remain a vital part of the delivery of service.

A second reason for this problem appears to be the varied backgrounds of the 91G. During the Vietnam period, many 91Gs had BA and Master degrees in the social sciences. As the all volunteer Army concept has been implemented, most trainees have only a high school education. The changing levels of maturity and prior training have complicated the supervisory process.

A third factor is mental health professionals' lack of understanding about what supervision is appropriate for the paraprofessionals (McPheeters, 1979). Dr. McPheeters (1979, p. 151) states that "Agency professionals are not necessarily prepared by graduate education to carry out training, supervision, and evaluation functions. These functions, however, are very important to effective performance by paraprofessionals."

immediate indication of how well they have understood the material just presented, and it helps students to properly focus their subsequent study efforts. The immediate opportunity to ask questions is also beneficial.

Evaluation

To successfully complete the Behavioral Science Specialist Course, the student must demonstrate an acceptable level of subject comprehension and skill mastery. We have identified eleven crucial objectives that the student must attain in order to graduate. These crucial objectives are those that were stated earlier, with the exception of 1 and 12.

The purpose of the evaluation process in addition to insuring that each student is capable of performing the tasks described by the crucial objectives and, thereby, qualified for the award of the 91G MOS, is to: (1) provide information for determining each student's progress throughout the course, (2) provide information for evaluation of instructional methods, and (3) distinguish levels of student accomplishment for the purpose of ranking students.

Based upon the tasks the 91G performs on the job, specific learning objectives stated in behavioral terms are specified for each block of instruction. The content of a lesson provides the information needed by students to attain the stated objectives. With the learning objectives clearly stated so that students know exactly what material they must master, examination questions are formulated for each lesson objective based on the material presented in class.

Content mastery is measured by nine paper-and-pencil examinations. These examinations are in written form, or they may require the student to respond to questions based upon situations or behaviors depicted on videotapes. A student must achieve at least 70% to pass a written examination. If a student does not pass an examination, the student is retaught and retested before proceeding in the course. If the student fails the retest, the student is eliminated from the course. (Such students may be retained in the course if extraordinary mitigating factors affected their academic performance.)

Skill mastery is evaluated for psychological testing (the administration and scoring of the MMPI), interviewing, and counseling. The performance evaluation is graded on a Pass/Fail basis. To pass a performance evaluation, the student must meet all of the preset performance standards in each of the areas specified on the appropriate evaluation checklist. (A copy of the checklists is available.) As with the written examination, if the student fails the performance test, the student is retaught and retested before proceeding in the course. If the student fails the retest, he is considered for relief from the course.

¹The evaluation checklist will be available at the AMEDD Clinical Psychology Course or may be requested from Behavioral Science Division, ATTN: Chief, 91G Branch, Academy of Health Sciences, Fort Sam Houston, Texas 78234-6100.

occupational education institution. Students who successfully complete the entire Behavioral Science Specialist course are awarded 23 college credits. The specific course titles and corresponding credits are as follows:

<u>Title</u>	<u>Credits</u>
Human Development & Behavior	3
Psychopathological Disorders	4
Combat Psychiatry	1
Psychological Testing	2
Clinical Interviewing	4
Applied Interviewing Skills	3
Principles of Counseling	3
Counseling Strategies	<u>4</u>
	23 Total

Instructional Methodology

An appreciation for the value of active and experiential learning is evident throughout the course. Experiential learning is used to achieve affective as well as cognitive objectives. For example, (1) videotaped simulated interviews depicting various symptomatology are shown and students are tasked with identifying the symptoms to support a particular diagnostic impression, (2) students are tasked with maintaining a log of interpersonal interactions, noting the variables that affect communication, (3) in small groups, students discuss questions of ethics, sociological and psychological theory, and clinical practice; they are then required to present their conclusions to the other students, (4) in role play triads -- client, 91G and observer -- students enact interviewing, counseling, and psychological testing sessions, (5) students participate in a T-group experience. These experiences are considered an integral part of the training program to prepare students for practice.

Also considered important is the providing of formal feedback to students so they realize early how well they are learning the material presented. For example, the many components of an interview and the various interviewing techniques are taught as separate entities. In the midst of the didactic presentation, students are presented an opportunity to apply the techniques appropriate to a particular phase of an interview. An instructor-student ratio of 1:6 is used during these periods. The instructor intermittently monitors two student triads, answering questions and providing instructional input. A 1:3 ratio is used for specified interviewing and counseling practicums when a student conducts a complete interview or counseling session with a student role playing a client while a third student observes. The instructor assigned to the student triad uses an evaluation checklist to critique the student's interview and the interview write-up that is submitted the following day. Three such practical exercises are conducted for both interviewing and counseling.

Additional feedback is provided to students by way of quizzes that are incorporated into each block of instruction. Following didactic instruction, students are administered self-graded quizzes. This provides them an

Program of Instruction (Cont'd)

<u>Academic Subjects</u>	<u>Periods</u>
Identification of Behavioral Problems	31
Psychopathological Disorders	63
Substance Use Disorders	11
Psychological Testing	30
Psychiatric Casualties	15
Consultation	12
Interviewing	89
Counseling	74
Experiential	131
Testing	121

The major difference between the present program of instruction and its predecessor is:

1. Training time was expanded from 10 to 15 weeks.
2. Instead of a crucial performance objective only for interviewing, such objectives were established for counseling and psychological testing.
3. Major subject areas were organized into distinct, instructional modules and further subdivided into topical lessons which correspond with tasks listed on the 91G Job Task Analysis Worksheet at the "10" level. Unlike the previous course, the current course presents information in one substantive subject area at a time and tests the students' competence in that area before proceeding to instruct in another area. (Students who fail to grasp a subject area are eliminated from the course.) Interviewing and counseling are exceptions to this module scheme. Concurrent with other subjects, interviewing is taught during the first seven weeks of the course and counseling during weeks 9 through 13.
4. The current course makes substantially greater use of audio-visual support, and it employs more instructor-student interaction and small group exercises, rather than a lecture method of instruction, to accomplish learning objectives.
5. Far greater emphasis is placed on preparing 91G10s to perform their role in the identification, treatment, and management of psychiatric casualties. Students are provided fifteen periods of didactic instruction on the subject of combat psychiatry. This is followed by a nine-period field training exercise. Students are then able to operationalize the concepts learned in the classroom. In response to simulated psychiatric casualties, students enact the procedures for the treatment of battle fatigue.

Pertinent to the program of instruction, it is important to note that in December 1983, the Academy of Health Sciences gained accreditation as an

1. Discuss the role of behavioral science specialist in the Army community, the qualities necessary to fill this role effectively, and the function of values and ethics in the performance of this role.
2. Discuss the stages of human development, describing the characteristics and tasks associated with each stage.
3. Identify the physical and psychological symptoms that indicate a behavioral problem and identify the correct case management response.
4. Recognize the general characteristics of an adjustment disorder, personality disorders, psychosexual disorders, anxiety disorders, somatoform disorders, affective disorders, schizophrenia and psychotic disorders not elsewhere classified when provided written statements or videotaped case studies.
5. Discuss the behavioral signs of substance abuse, dependence, withdrawal, and tolerance; and given case studies describing drug abusers, discuss the motives for using drugs and the effects of drug abuse.
6. Administer and score the MMPI; describe the purpose and characteristics of the WAIS-R.
7. Describe the role of behavioral science specialists in a combat environment; describe the behavioral characteristics of battle fatigue; and demonstrate knowledge of pertinent Army regulations, policies, and procedures which may apply to a 91G's role in a combat environment, to include treatment of battle fatigue, combat patient management, and administration of medication.
8. Discuss the command and the medical consultation role of the behavioral science specialist.
9. Conduct and record an intake interview and a collateral interview; select appropriate referral procedures in specific situations, and present a case for supervision.
10. Select and employ counseling strategies: guidance, supportive, and crisis intervention, effectively using counseling techniques.
11. Demonstrate interviewing and counseling skills.
12. Demonstrate knowledge of group dynamics by active participation in a training group.
13. Demonstrate achievement of physical readiness.

Program of Instruction

The course's academic content in summary form is as follows:

<u>Academic Subjects</u>	<u>Periods</u>
Orientation to the Job of Behavioral Science Specialist	10
Normal Human Development	19

Medical Orientation Course or possess the 91B MOS; (2) Enrollee must possess a high school diploma and ST score of 105 or higher; (3) Enrollee must have no record or evidence of instability or immaturity; and, (4) Enrollee must be able to communicate effectively both orally and in writing in English. Prerequisites (1) and (2) are clear cut, but no criterion-referenced instrument is used to measure stability and maturity or communication skills. The program is largely dependent upon the judgments of recruiters and career counselors to determine whether these prerequisites are satisfied. This screening process is adequate but far from ideal.

Enrollees who are recognized as too immature to function as 91Gs are eliminated from the course. Some, however, go unidentified and manage to successfully complete the course. Their immaturity only comes to light when they are unable to effectively respond to clients and patients because they are struggling with some of the same maturation problems exhibited by the young clients they are expected to help; or because of their sensed immaturity, they are intimidated by older clients and are unable to effectively and comfortably deal with them. A proposal to establish the 91G MOS as a reenlistment MOS was submitted in order to help alleviate this problem; however, the proposal was disapproved due to overriding DA personnel management considerations. Given the frequent enrollment of eighteen- and nineteen-year-old personnel and the difficulty of assessing maturity during the relatively short training period, the occasional awarding of the 91G MOS to inadequately mature personnel will undoubtedly continue.

Since the prospective enrollees' ability to communicate effectively is not actually tested and since career counselors do not fully appreciate the communication skills required of a 91G, only those manifesting a gross deficiency are screened out. The course's academic requirements do challenge the students' communication skills. Consequently, many with deficient skills are eliminated because they are unable to conduct acceptable interview or counseling sessions or their interview write-ups fail to meet standards. Those with inadequate communication proficiency, but who have compensating academic abilities, can, however, successfully complete the course. The utility of these marginal graduates is limited. In addition, their poor communication skills adversely affect the case supervision they receive; and, most importantly, it may adversely affect the quality of service provided clients.

Although the success of course enrollees is not ensured by the prerequisites, they do perform an evident screening function. Attendees are, by in large, more intelligent, more mature, and better academically prepared than the average Army inductee. Their shortcomings, however, demand the attention of trainers and on-the-job supervisors.

Instructional Objectives

The present course is fifteen weeks long and is necessarily geared to train the individual to perform a wide range of functions with the professional staffs of TOE and TDA organizations in support of mental health, social welfare, and human service programs. Each block of instruction has specific training objectives, but these are generalized into thirteen broad instructional objectives. Students must demonstrate an ability to:

The Training and Supervision of the Behavioral Science Specialist

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Abstract

Behavioral Science Specialists(91G) augment psychiatrists, social workers, and psychologists in the delivery of mental health and human services in the military community. Their effectiveness is dependent upon their receiving quality preparatory training and on-the-job supervision. This paper describes the 15-week Behavioral Science Specialist Course, implemented with Class 1-85 on 29 October 1984. The prerequisites for course enrollment, the program's training objectives, the subjects taught, the methods of instruction employed, and the evaluation tools used to measure the students' cognitive learning and acquired skill level are described. The paper also provides a review of the literature on supervision of paraprofessional mental health workers, summarizes relevant findings, and specifies a systems approach to the supervision of Behavioral Science Specialist.

The purpose of the Behavioral Science Specialist training program conducted at the Academy of Health Sciences, Fort Sam Houston, Texas, is to prepare paraprofessionals to augment psychiatrists, social workers, and psychologists in the delivery of mental health and human services in the military community. This purpose has remained constant over the years; however, because of the expanded role of the Behavioral Science Specialist (91G), changes in the academic preparedness of students, and advancements in training concepts, the program of instruction has changed markedly since its origin in 1947.

The continuous challenge has been to identify those student variables that are important to successful course completion and subsequent successful duty performance, those subjects that should be emphasized in student training, the training methods that are most effective in producing qualified 91Gs, and the means to reliably measure the student's achievement of training objectives. The new 15-week Behavioral Science Specialist Course, implemented with Class 1-85 on 29 Oct 84, represents the state of training available to address these concerns.

Course Prerequisites

In regards to those variables that are important to successful course completion and subsequent successful duty performance, the following course prerequisites exist: (1) Army personnel must complete the 4-week General

TRAINING

stories or to sentence completions. It must be remembered however, that we are not looking for pathology but for issues of fit, somatization questions, depressive signals, or substance abuse characteristics.

We follow testing with a clinical interview with the Aeromedical Psychologist. This person has had training and experience in dealing with the aviation environment and has all the testing data at hand. Aviators tend to be great at deception and fall into the same category as alcoholics in their ability to deny problems and put on a front for the interview. The evaluator must realize that self disclosure is not a quality highly favored by aviators and thus, the format of the interview may need to be changed. Again, it is what is not said more than what is that is the focus.

The presence of the findings from our test battery seem to have a powerful effect on the aviator. One reason for this seems to be that they believe in our "witchcraft" and think we can get who they really are from the testing. This makes him/her more willing to talk about issues you as therapist bring up and more willing to level with you. Thus, the testing hypotheses seem to be more fruitful in getting at real issues of the person. They rarely open up fully but what is given is usually enough for us to draw our conclusions.

The major problem we currently face at the Aeromedical Center is in the validity of our data. Psychological testing is not readily normed for "normals" and we are making inferences from the normal population. Also, we do not fully know how our conclusions are going to hold up. The Air Force and Navy have given us some hard data but even this is questionable because it is drawn on college graduates in high performance aircraft while we are working with helicopters. As we get more into Nap of the Earth flying at high speeds we approach similar characteristics except an F-17 is at 40,000 feet while the Cobra may be at 4 feet above the trees. We are working on producing validation data but we may never get a valid finding. And even what inferences we have drawn do not fit the Black or female population of aviators, and yet we must make evaluations here as well.

Each aviator is a unique opportunity to test our clinical skills of assessment and interpretation but we must remember the costs involved in disqualifying a trained aviator that cost over \$100,000 to train or in the fatality of an aviator allowed to fly when he/she should not. The onus is on the psychologist to answer psychiatric issues in this "normal" population, and in few other areas will we have a greater impact on an individual's life goals.

or designing your treatment plan. There are certain problems in doing this however, which must be recognized. Since, in most cases, with the possible exception of family dysfunction, the aviator has been grounded for medical reasons prior to your appointment, you will probably have a resistant, angry, and fearful patient on your hands. If he/she has not been grounded you should immediately contact the flight surgeon to inform him/her of the aviator's presence in your office. Failure to do so could have disastrous consequences both for you and the aviator. Confidentiality does not extend to aviators! In either case you get a resistant, fearful, and angry patient whose one goal is to look good enough to return to flight duties.

At the Army Aeromedical Center we are asked daily to evaluate aviation personnel involved in training or for return to flight or control of flight duties and have found some interesting characteristics. We begin our evaluation with a historical interview to include the person's reasons for pursuing a career in aviation. This is true of both rated aviators as well as student pilots. We follow this with the MMPI. Most of the time this results in a "fake good" profile making diagnosis questionable but it does not make the testing wasted. Many times data is gained not from what is present but what is missing, and since it is a defensive profile we know to give special attention to any scale which is out of line.

The average aviator appears to reveal elevated Pd and Ma scales but rather than revealing pathology these seem to support successful, risk taking, action oriented, rule bending profiles. The absence of these elevations may signal a person who has lost some of those traits and may signal a loss of fit with the aviation environment.

Another elevated scale often associated with aviators is Pt revealing an obsessive type of personality. Low flight requires obsessiveness and attention to detail in order to stay alive. Fixed wing aircraft will glide a great distance with an engine failure but a helicopter tends to glide almost straight down, sometimes with less than desirable results. When this obsessiveness gets carried to extremes, however, we find a syndrome termed fear of failure (fear of flying by the line) where the soldier cannot live up to his/her own expectations for perfection and thus suffers overpowering stress when involved in flight, or perhaps even approaching the aircraft.

Since we are dealing with normal populations a second inventory administered is the Myers-Briggs Type Inventory. This instrument gives us a pattern of behavior which again can be compared to other aviators. This is a new addition to our battery and little is known of its useability but it is beginning to group most aviators into the ISTJ mold.

Projective devices have proven to be helpful in our evaluations with the most productive being the Thematic Apperception Test and Sentence Completion Blanks. Aviators give few responses to Rorschach cards and seem adroit at avoiding substance issues. This is not true for TAT

Psychological Evaluation of the Army Aviator
Where Normal Isn't Normal

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Abstract

The Army aviator is a mixed bag of goods, rarely appearing to fit the commonly accepted mold of normalcy. Those who engage in "low flight" have specific personality characteristics which, if not properly addressed by mental health professionals, can result in a loss of a promising career in aviation or one hand or the loss of life and machine on the other. The inherent dangers of flight attracts people who seem to thrive on danger action, and stimulation. The Army Aeromedical Center is attempting to isolate variables of personality which will aid psychologists in making appropriate diagnoses and choices with aviation personnel.

This is an informative paper not based on variable data but is presented to address the questions of human differences, the problems of evaluation of a "normal" population, the types of defenses most often found with this population, and some observations which appear to be characteristic. It is hoped that research currently in progress will produce quantifiable results in the near future.

Those of you who have been asked to evaluate or treat an aviator or air traffic controller have probably experienced some frustration in completing that evaluation or gaining cooperation in treatment. The foremost concerns in dealing with aviation personnel are to keep in mind that the overwhelming majority of people you will see are not DSM III diagnosable, are very reluctant to see you or any other mental health professional, are fighting to protect their careers in aviation and perhaps the military, are by nature secretive and defensive, and have personality traits often found in persons with sociopathic diagnoses.

Most probably you will be asked to evaluate or treat aviators due to somatization issues, mild depression, alcohol abuse, family dysfunction, interpersonal lack of fit, or for possible brain injury. For the last type of problem hopefully you will seek the consult of a qualified neuropsychologist because the ramifications of your findings are far reaching and heavy. In the former cases you will probably wish to rely on your old stand-by assessment devices to help you in making your response

position, it fosters organizational inflexibility, misuse and malutilization of personnel talent, as well as reducing job satisfaction and morale.

Good predictors can predict with some success whether a candidate can do an effective job, however it cannot assure that they will be highly motivated to do so. By adhering to these principles and recognizing the limitations and the advantages of psychological screening for selection purposes we can improve the organizations ability to make decisions in this important area of personnel selection and classification.

2. Outcome criteria that is job relevant and specific should be clearly identified. If "unsuitability" is to be predicted, the probability associated with accurate identification should be developed for each criterion which has been behaviorally defined.

3. Options associated with different probabilities of success or failure should be presented to the decision makers rather than merely a go - no go determination.

4. A task or job analysis should be conducted by the agencies to identify those psychological attributes considered most important for effective conduct of the job.

5. A battery of at least 4 psychological instruments should be administered to insure a reliable estimate of the individuals personality structure, vulnerabilities and stress reaction.

6. These tests should be validated for use with the specific population being evaluated using both predictive and concurrent validation procedures. These studies should be conducted in accordance with the most recent Joint Technical Standards for Educational and Psychological Testing.

7. Specific cut off scores for the various instruments and a risk-decision matrix should be developed using the validation data and criterion selected.

8. Standardized interviews should be developed to use the test results to best assess weaknesses of the candidate.

9. Written evaluation should be prepared for each candidate tested, documenting rationale and data that would support a suitability statement. Candidates should be rated based upon their suitability as well as the false-positive or false-negative risk inherent in the selection procedure, since the of psychological or personality factors that are predictive of non-suitability for intelligence work are not well documented. A more complete understanding of them could be achieved by developing a data base and establishing relevant measures.

10. A utility analysis should be performed to assess the overall effectiveness of the program in terms of training success, job performance and attrition. However, this requires the development of a valid predictive instrument for the decision maker.

11. A consent form authorizing that test results can be used for research purposes should be completed at the time of test administration.

Although psychological evaluations for the purposes of determining a candidates suitability for this work is still in its infancy the above guidelines would allow us to maximize the utility and validity of our selection decisions. Selection procedures have been criticized in the past for assuming that the job is "static" and that the candidates for the position must be matched precisely to the demands of the job. Apart from the ethical difficulties I have with this

an orientation to the role of the supervisor and how 9IGs are to relate to clients and other staff members. Clarity must be provided as to the type of supervision to be utilized. Hess (1980) summarizes the type of supervision as follows: lecturer, teacher, case reviewer, monitor, collegial/peer and therapist. While all six supervisory relationships may be employed with 9IGs, the first four types cited will characterize the relationships most supervisors will have with new Behavioral Science Specialists. These types of supervisory relationships involve a one-way communication pattern from an expert to a novice. However, eventually all supervision must ultimately involve two-way communication between the supervisor and the supervisee most characteristic of a collegial/peer type of supervision (Goodyear and Bradley, 1983). In addition, the frequency of supervision and the quality of the relationship between the supervisor and supervisee must be addressed. McPheeters (1979) views ongoing case review as an excellent teaching and supervising mechanism for paraprofessionals, but indicates that its success depends upon the good relationship (empathy) between the two staff members and on the regularity of the meetings. Periodic employee rating forms as a method of supervision appear less than satisfactory, particularly if they focus on socially adaptive skills (e.g., whether the worker was on time, whether he kept up to date with paperwork) rather than with clients.

Once an effective relationship has been established, the supervisor's next activity is to assess the 9IG's clinical skills (Subsystem 2.0). There are numerous ways in which this assessment can be made. Direct observation of the 9IG while he/she interviews/counsels a client is probably the most effective method of assessing skill development. These skills can be assessed by co-treating a client with the novice 9IG or audiotaping or videotaping the 9IG interview or counseling session. The supervisor must be knowledgeable about the entry level skills 9IGs are expected to have mastered (e.g., conducting and recording an intake interview; administering and scoring the MMPI; conducting a collateral interview; presenting a case for supervision, etc.; see AR 611-201 for a full description of 9IG entry level skills). The supervisor will decide upon the skills that he/she wants to assess and the method of assessing the skills. Senior 9IG's skill assessment will be more individualistic, but the basic process will be the same. Define the skills in behavioral terms, and avoid global and undefinable ratings like overall counseling effectiveness.

Subsystem 3 requires the supervisor to pose a question, "Is the 9IG capable of functioning at an acceptable level for the agency?" This question is best answered by defining the tasks of the agency (both administrative and clinical tasks) and matching the tasks of the agency with the skills of the 9IG. Generally, 9IG jobs have been focused around three areas: specific tasks (e.g., administering and scoring tests, doing intake interviews); specific professions (e.g., social work case aide, psychological assistant); and administrative tasks (e.g., answering the telephone, scheduling patients). Whatever the agency's needs, McPheeters (1979) suggests that the leaders of the agency must firmly agree on what model of paraprofessional use will be adopted to avoid misunderstanding and conflict between professionals and paraprofessionals about what their role should be.

Establishing supervisory focus (Subsystem 4.0) is the next activity. Questions of acceptability to the agency determine supervisory focus. Positive answers to questions of 9IG acceptability generally require the supervisory

focus to be more personal (Subsystem 4.1). Curtis and Yager (1981) have suggested that a personal focus would involve exploration of the supervisee's feelings and the interconnections between the supervisee's personal dynamics and the dynamics presented by the problem of the client. On the other hand, a negative answer to the question of acceptability would require a content focus (Subsystem 4.2, Remedial/Inservice Training), wherein the supervisor would spend the majority of his/her time teaching and providing information to the new employee.

New paraprofessional workers that demonstrate acceptable basic skills must be required to staff their cases (Subsystem 5.0) on a continuing basis. This technique provides a natural avenue to continue to build mutual trust, assess competence and further clarify the 91G's role. Conversely, 91Gs demonstrating a lack of acceptable skills should be required to attend a remedial ongoing time based training program (Subsystem 4.21) to rectify deficiencies. Competency based training appears to be the most effective method for paraprofessional remedial training because it focuses on specific competency goals, offers flexible scheduling and allows the learner to move through the program at his/her own rate. Military mental health professionals may want to ask the 91G Branch, Academy of Health Sciences, to provide this training or they may prefer to locally organize inservice training utilizing competency based principles.

Subsystem 6.0 sets in motion a very complex process wherein the supervisor seeks an answer to the question, "Is the 91G's behavior acceptable?" Once again, the focus is on whether or not the paraprofessional can demonstrate observable skills. Only this time, the ability to manage individual cases is more closely scrutinized. A positive answer to this question allows the paraprofessional to continue to see patients (Subsystem 5.0) and to receive feedback (Subsystem 7.0) and inservice training (Subsystem 4.22) commensurate with his/her personal needs. Eventually, the supervisor must assess once again whether the 91G's progress or development as a mental health worker is satisfactory (Subsystem 4.3) and, if so, whether to continue supervision (Subsystem 4.4) or seek administrative measures (Subsystem 4.5) to promote the paraprofessional to increasing levels of responsibility.

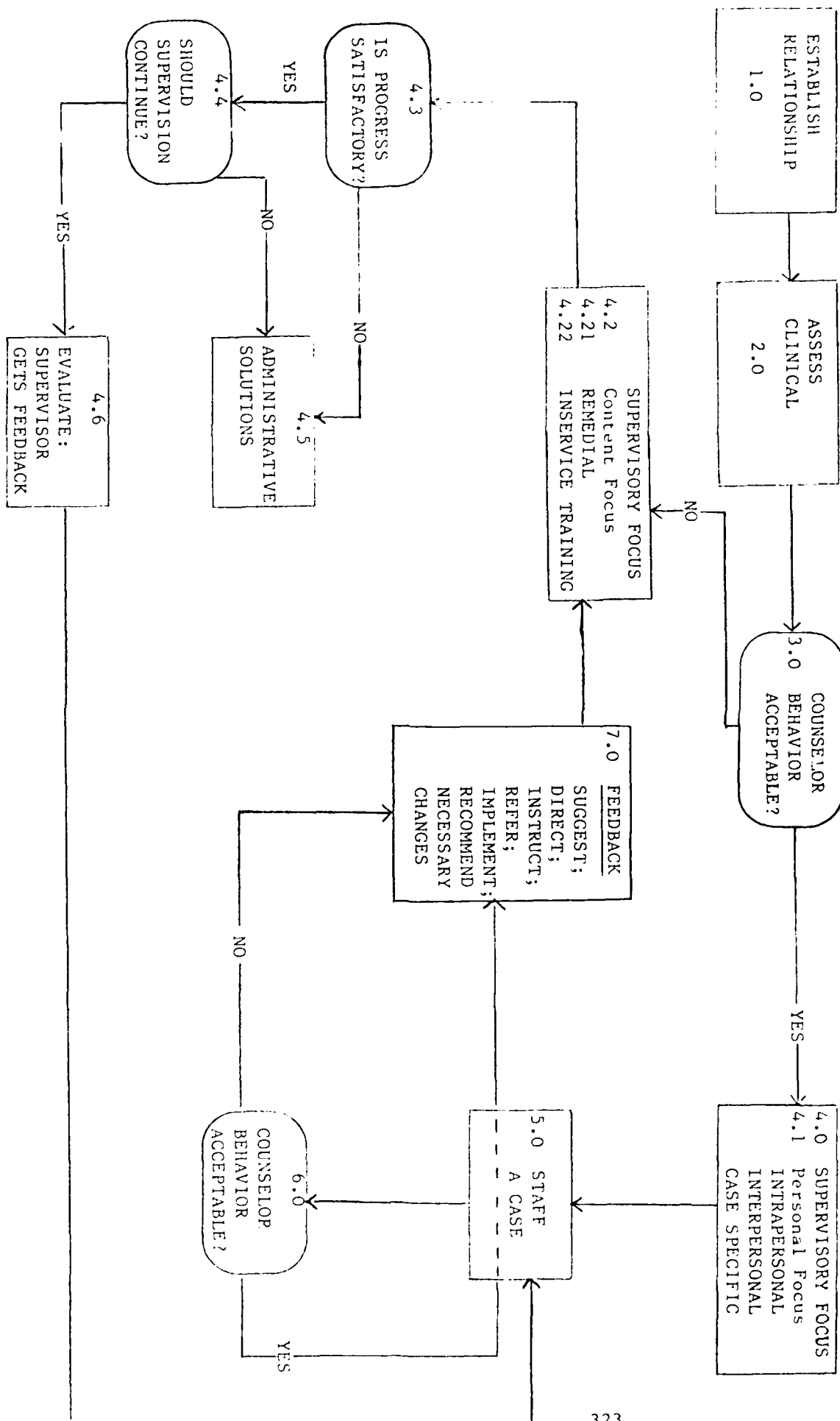
A negative answer to the question of ability to manage individual cases follows a similar pattern as the one described above. However, training is more focused on specific skill acquisition in a specified time period (Subsystem 4.2) and results in punitive administrative solutions (e.g., rehabilitative transfer; MOS reclassification; discharge from the service as unsuitable) should the 91G fail to meet the standards.

In Feedback, Subsystem 7, the supervisor gives the paraprofessional feedback on his case management and counseling skills. The supervisor may need to exert control over the case, but should resist the urge to completely take over every case. Available research (McPheeters, 1979; Alley, Blanton, Feldman, Hunter & Rolison, 1979) indicates that paraprofessional mental health workers need and respond well to specific recommendations from their supervisors.

Comment

Mental health professionals responsible for the supervision of 91Gs will best perform their function by taking a systems approach to supervision. A systems model for supervision that is flexible enough to respond to the professional needs of all skill levels of 91Gs is proposed. This model will assist mental health professionals as they strive to meet the challenge of 91G supervision.

SUPERVISOR'S FLOWCHART



Reference Note

For the purpose of this paper, a supervisor will be defined as one who oversees the work of another with responsibility for the quality of that work. Behavioral Science Specialist, 91G or paraprofessional are labels that will be used interchangeably. They are labels that define a regularly employed and fully salaried staff member whose formal degree in mental health does not exceed the baccalaureate (BA or BS level).

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A Video "Mass Psychiatric Casualty Exercise"

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Battle-tested approaches to treating the Combat Stress Casualty are known. However, knowledge of these techniques is not widely known by those who will probably be most involved in treating the Combat Stress Casualty, namely, Battalion Aid Station and Medical Company personnel. This tape is designed to complement instruction on Combat Psychiatry by providing a video "mass casualty exercise" suitable for classroom use. The tape consists of an introduction, a scenario statement, and interviews with nine simulated combat stress casualties. The introduction provides background for the training instructor on the content of the tape and suggestions for best use of the tape. The scenario statement is a recording of the actual scenario presented to the participants of the exercise from which the interviews are culled. The interviews are deliberately brief, ranging in length from 1 to 3 minutes. The interviewers are mostly 91B^S from the medical companies of the 8th Medical Battalion who were presented with "casualties" made up of other 8th Infantry Division (Mech) personnel. The strength of the tape is in capturing the behavior of the casualties. These casualties provide a wide range of stress-related symptoms. Viewers have the opportunity to make their own assessment and disposition of many casualties. When coupled with instruction on the principles of treatment for Combat Stress, this tape can provide a valuable, practical training experience for any soldier.

In doing the actual exercise, soldiers benefitted most from the training by being faced with one or more casualties prior to any instruction on treatment principles. After being confused and unsure of how to deal with the casualty, soldiers were very receptive to both conceptual and practical instruction. The tape is edited to allow the same kind of experience for viewers. Pre and post-instruction data on both self-report and disposition questions can be built into the training.

TREATMENT

Use of the Visual-Kinesthetic Disassociation Technique in the Treatment of Post-Traumatic Stress Disorder

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Abstract

Visual-Kinesthetic Disassociation (V-K) is a Neuro-Linguistic Programming (NLP) intervention specifically used to remove from traumatic memories their power to impair current functioning. It is a brief therapy technique which does not require the client to intensely re-experience the emotions associated with the trauma. Therefore it is especially appropriate for use in military psychology settings as it minimizes disruptions in the service member's duty performance. Basic elements of NLP used in the V-K paradigm are described and the steps of the V-K are presented. The process is demonstrated with a video-taped example of Maryann Reese, Certified Trainer of NLP, using V-K with a Vietnam veteran.

Neuro-Linguistic Programming

NLP is a model of therapeutic communication that describes the process of change. The original development of this model was essentially a natural history of therapeutic change interventions as utilized by Virginia Satir, Fritz Perls, and Milton Erickson (Bandler & Grinder, 1975a; Bandler & Grinder, 1975b; Bandler, Grinder & Satir, 1976; Grinder & Bandler, 1976; Grinder, DeLozier & Bandler, 1977). Richard Bandler, a gestalt therapist, and John Grinder, a linguist, video-taped and described certain patterns of intervention used by these master therapists to achieve predictable change. In addition, as they listened to the words people used to describe their experiences, they heard them as literal, rather than figurative, descriptions of their cognitive processes.

The V-K Disassociation is a specific therapeutic pattern for helping a person to think about a past traumatic experience without re-experiencing the overwhelming feelings associated with that experience (Bandler & Grinder, 1979; Cameron-Bandler, 1978; Lankton, 1980). In order to understand the V-K process, it is necessary to understand the basic elements of NLP of rapport skills, 4-tuples, associated vs. dissociated experiences or memories, and anchoring.

Rapport Skills. One prerequisite to therapy is the ability of the therapist to establish rapport at the unconscious level with the client. The therapist achieves this by matching such components of the client's experience as posture, body movement, breathing rate, eye blink rate, voice tone, speed, or volume; eye movements, and types of verbs or other

specific linguistic structures used. In this way, the client unconsciously knows that his or her concerns have not fallen on deaf ears, so that the therapist sees the whole picture, gets a taste of what it is like to be the client, and has a handle on the situation (Bandler & Grinder, 1979; Cameron-Bandler, 1978; Lankton, 1979).

4-tuples. If you remember what you had for dinner last night, you may start with the sight of steam rising from your plate, with a particular odor or flavor, with the sound of crunching, or the texture or temperature of the food in your mouth. As you think about your meal, you probably remember some characteristic in each of the four representational systems; visual, auditory, kinesthetic, and olfactory/gustatory. The specific sensory based elements in each representational system make up the 4-tuple (Dilts, 1983; Grinder, DeLozier & Bandler, 1978; Lankton, 1979). For any experience, the 4-tuple is comprised of what the person actually perceives from the environment plus internally generated elements such as what the person tells himself or herself about the experience as it is happening. The complete 4-tuple can be ascertained by asking the person to describe the experience, beginning with any one representational system and overlapping to the others. Changes in the person's current 4-tuple can be observed by noticing shifts in such things as posture, skin color, eye movements, muscle tension and listening for changes in breathing rate and voice tone, speed, and volume.

Associated vs. Dissociated Experience/Memory. Remembering last night's dinner, you may picture it from either an associated or dissociated perspective. If you see the meal as you saw it from your own eyes last night and have the same feelings you had then, you are in an associated experience. If you see yourself eating as if you were watching a video-tape and have feelings about that experience, you are in a dissociated experience. As you can imagine, the feelings generated by associated memories are stronger than those generated by dissociated memories (Bandler & Grinder, 1979; Cameron-Bandler, 1978).

Anchoring. Anchoring is a way of stabilizing a particular internal experience so that it can be predictably elicited and utilized. It is accomplished by pairing a particular sensory stimulus, eg. visual, auditory, kinesthetic, or olfactory/gustatory with the internal experience so that when the stimulus is repeated in exactly the same way, the internal experience will also be repeated. One way to think of an anchor is that it is like a very effective discriminative stimulus (Bandler & Grinder, 1979; Cameron-Bandler, 1978; Dilts, 1983; Lankton, 1979).

There are numerous examples of anchors in everyday life. Red lights (visual) elicit stopping. The national anthem (auditory) sparks patriotic feelings. Cookies baking (olfactory/gustatory) may remind you of special childhood memories. Being touched just so by your partner (kinesthetic) elicits sexual feelings.

In the same way, if a client says, "When I am on the firing range looking toward the tree-line, I feel just like I am in Vietnam again," the counselor can anchor this state with a particular touch or word. By having the client describe this experience in detail from an associated perspective, the client will access the problem behavior so that the therapist can then recognize its presence or absence as the therapy progresses. Similarly, the therapist can elicit and anchor therapeutically useful positive states.

Visual-Kinesthetic Disassociation

V-K Disassociation combines these basic elements of NLP in a particular pattern to create a new internal experience to an old stimulus situation by separating the feeling portion of the internal experience and providing a more comfortable feeling. This results in the client having an additional choice at the unconscious level about how he or she will feel when confronted with the traumatic memory. The following description of the steps in this technique has been taken from Bandler and Grinder (1979), Cameron-Bandler (1978), and Lankton (1980). More detailed descriptions and additional clinical examples can be found in those sources.

1. Establish rapport.
2. Elicit and anchor the problem state. This should be brief as it is not desirable for the client to suffer unnecessarily. The client's non-verbal state must be carefully observed for checking the success of the intervention when it has been completed.
3. Establish a strong anchor for comfort and security. Kinesthetic.
4. Hold this anchor constant and have the client visualize a still shot of the first scene of the traumatic experience in front and from a dissociated perspective. "See yourself over there..."
5. Tell the client to float out of his or her body and watch himself or herself watching the younger self. Anchor this dissociated state. This second step dissociation helps keep the client from collapsing into the feelings of an associated memory. If it is lost, it should be re-established before continuing.
6. Have the client watch the entire scene as if it were a movie and learn something new. Hold the dissociation through auditory, visual, and kinesthetic anchors. "Sitting here comfortably watching yourself watch your younger self over there going through that experience then..."
7. Re-integrate the "watcher" and the present-day person. "Float back into your body..."
8. Re-integrate the initial dissociation by having the "older" person go to the "younger" person and comfort him or her, saying that the "older" person is from his or her future. When this is complete, have the client place the younger self back inside their body.
9. Re-run the experience without the anchors and look for the original 4-tuple. If a phobic response is involved, future pace by having the person imagine the next time it could happen and look for the original 4-tuple. If the problem 4-tuple is not present, this is a check on the work that indicates success.

Demonstration

The video-taped example shows an NLP trainer using V-K Disassociation with a Vietnam veteran (Reese, 1984). The client was a nineteen year old marine during the Vietnam war. The traumatic event involved a fire fight in which a much admired friend was killed. The memory was triggered by the sound of a helicopter. He reported that whenever he heard a helicopter he "stopped" and lost awareness of his external environment. Although not especially dramatic, this behavior was noticed by others and interfered with his personal and professional life.

This example is particularly valuable because it illustrates the integration of V-K Dissociation with gestalt oriented grief work, giving some indication of appropriate ways for therapists of other orientations to combine this intervention with their other therapeutic skills. In addition, the dissociation included olfactory as well as the usual visual and kinesthetic elements.

The therapist, Maryann Reese, is a Certified Trainer of NLP, Executive Director of the Southern Institute of NLP, Adjunct Professor of Special Education at the University of North Florida, and a Licensed Marriage and Family Counselor. She has conducted NLP training for U.S. Army Organizational Effectiveness personnel in Europe.

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Behavioral Management of Chronic Seizure Disorders: A Case Study in
The Efficacy of Stress Management Training

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Abstract

Although anticonvulsant medications still remain the treatment of choice for chronic seizure disorders, response to such medications is variable. A growing body of literature suggests that behavioral interventions -- such as biofeedback and relaxation training -- may be effective in reducing seizure frequency in some epileptic patients. In the current case, stress management training was employed as an adjunct treatment for a 50 year old, female epileptic with a 35 year history of poorly controlled grand mal and psychomotor seizures. During the course of treatment, the patient was able to achieve an 84% reduction in seizure frequency, going from between 12-14 seizures per week to approximately 1-2 seizures per week. Neurodiagnostic, psychometric, and follow-up data are presented. The results are discussed in relation to current theory regarding the etiology and maintenance of seizure disorders, and hypotheses are generated regarding those aspects of stress management training which appear to be essential to symptom reduction.

Introduction

Of epileptics treated with anticonvulsants, it is generally accepted that 50% are seizure-free, 30% achieve some reduction in seizure frequency, and 20% demonstrate no significant change (Freeman, 1979). Although anticonvulsants still remain the treatment of choice, several variables may attenuate their therapeutic effectiveness. For instance, response to anticonvulsants is known to vary as a function of the type of seizure disorder involved. With anticonvulsants, for

example, roughly 28% of patients with temporal lobe epilepsy achieve a complete remission of symptoms, whereas approximately 50% of cases of grand mal seizures demonstrate comparable relief (Merritt, 1979).

Another possible cause for variability in response to anticonvulsants may be the failure of some patients to comply with anticonvulsant regimens. Such noncompliance may result from any number of psychological factors -- such as a nonmedical orientation, inadequate intellect, religious beliefs, etc. -- or may be related to the various noxious side effects attributed to anticonvulsant use, such as those reviewed by Fraser (1981) and Upton and Longmire (1975).

Yet another possible reason for the variable therapeutic effectiveness of anticonvulsants is the fact that epilepsy is a psychoneuropharmacobiopsychophysiological" syndrome (Mostofsky, 1978). In other words, a variety of genetic, psychological, social, biochemical, environmental, and neurological factors are involved in the etiology and maintenance of seizure disorders. The relative importance of these multiple etiological factors appears to vary from case to case. Anticonvulsant medications, because of their specific effect on synaptic transmission, may be effective in those cases where biochemical factors are heavily weighted etiologically. However, they are less likely to be as effective in cases where psychosocial factors are heavily implicated, even when such psychosocial factors exist in the presence of concomitant, demonstrable neurological dysfunction.

Current thinking regarding seizure disorders, stemming from the work of Javanovic (1974), proposes the existence of a stress threshold which, when exceeded, allows seizures to occur in a predisposed organism. As Mostofsky's polysyllabic label implies, the source of such stress may be endogenous -- as with metabolic disturbances, toxic states, hyperdepolarized neurons, or psychopathology -- or may be exogenous -- such as climatic extremes, job-related pressures, physical danger, or disturbed interpersonal relationships. According to this model, treatment of epilepsy requires that an organism's level of stress be maintained at a level below that organism's threshold. Anticonvulsants fulfill this mission, it is thought, by mildly depressing CNS activity, thereby suppressing hyperactive and hypersynchronous neuronal discharges. Anticonvulsant treatment failures occur, therefore, when exogenous or other endogenous sources of stress are not controlled and cause the organism to exceed its stress threshold in spite of the CNS effects of anticonvulsants.

The following case study illustrates the role of exogenous and endogenous stress in maintaining chronic seizure disorders. It also generates hypotheses regarding the effectiveness of adjunct psychological treatments for cases of epilepsy.

APPENDIX C

requesting Agency: U.S. Army Medical Department Activity, Fort Ord, California 3941. Autovon 929/2678/7591; POC: LTC Shoberg.

Data Processing Installation (DPI): H619

Project Officer: LTC John D. Shoberg, MSC, Director of Intern Training and Assistant Chief, Clinical Psychology Service; Autovon 929-2678/7591; LOC (408) 42-2678/7591.

General Description of Present System: Data required to prepare necessary reports and documents pertaining to psychological assessments are obtained by manual scoring. Complex ratios, scoring configurations, preliminary and final interpretations are rendered by members of the professional staff and typed by the secretary.

General Description of Proposed System:

1. System Title: Clinical Psychology Assessment Support System (CPASS).
2. Hardware Configuration:

<u>Quantity</u>	<u>Make & Model</u>	<u>Price for each item 3 systems</u>
3	Apple IIe Computer 64K Memory with Applesoft Basic	
3	Disc Drive With Controller	
3	80 Column Card	\$1,695.00 per package
3	Apple Monitor II	
3	Monitor Stand	

APPENDIX B

The authors of this paper accept full responsibility for any omissions in the recognition of any sources deemed not adequately identified; as such, an omission of deserved would be entirely inadvertant.

We wish to acknowledge the assistance of MAJ (F) Anthony Zold, Ph.D. and MAJ (F) Lloyd Cripe, Ph.D. for supplying encouragement and an occasional turn of phrase in the wording of the CPASS proposal as derived from discussion of the proposal they were preparing from microprocessor support to Madigan Army Medical Center at the time the CPASS proposal was also being prepared and staffed.

The assistance of LIE David Gillooly, Ph.D. HSC Psychology Consultant is also gratefully acknowledged for his encouragement and advanced knowledge of elements likely to appear in HSC Regulation 40-3 which governs the use of psychological tests and materials within Health Services Command. Dr. Gillooly was also extremely helpful in sharing of his research into legal precedents relating to the use and abuse of psychological tests and instruments.

The authors are also grateful for the support and encouragement offered by COL Joseph C. Finney, M.D., Ph.D., Chief, Department of Psychiatry, Silas B. Hays Army Community Hospital, who along with Ray Fowler, Ph.D. and others must be counted as one of the original innovators in the use of computer technology in the delivery of mental health services.

Finally, the authors wish to acknowledge the support of COL Umberto D'Imbrosio, M.D. Deputy Commander for Clinical Services, and COL Robert Herich, M.A., Deputy Commander for Administration and COL F. Guinnones, M.D., Commander, Silas Hays Army Community Hospital for their interest and support during the development of the CPASS proposal and their ongoing assistance in its implementation.

APPENDIX A

PUBLICATION	TITLE	DATE
AR 18-1	Army Automation Management	15 Aug 80
RSC Supplement 1 to AR 18-1	Army Automation Management	25 May 84
SA 8-75	MEDCASE Supply Bulletin	24 Mar 82

provides for a description of the hardware which will support the proposed automated system. This obviates the need for a separate Appendix D or I. Thus approval of the Appendix C under this format permits software purchase and/or development and equipment purchase as well. Appendix B of this paper contains acknowledgments concerning other "public domain" sources from which parts of the proposal were derived other than from regulations.

18-1, and SB 8-75. A listing of these regulations is contained in Appendix A of this paper.

Funding for microcomputer technology is available through programs such as the "capital expense" (CAPEX) program, the "medical care support equipment" (MEDCARE) program, and the continued operations and maintenance (OMA) funding process. The capital expense program (CAPEX) is the vehicle by which items or systems costing between \$1,000.00 - \$2777.79 can be purchased. The (MEDCARE) program permits acquisition of those items related to support of medical care which cost in excess of \$5,000 (except when the equipment is for new facilities). OMA Supply funds are a routine part of most activities' yearly budget most often used for purchase of computer paper, furniture, ribbons, diskettes, and other routine supplies. Software can also be purchased with OMA funds providing the cost is less than \$1,000 and the appendix C required has been properly approved.

In order for acquisition of hardware to take place it is necessary to submit a proposal thru channels for approval. Coordination with the local Automation Management Officer (AMO) within your command is essential in ensuring success. This is in part because applicable regulations are revised with sometimes disturbing frequency, and the AMO is the staff officer within most commands with primary interest in being current with applicable procedures as well as regulations. Generally, the AMO will assist in the preparation of your proposal and with scheduling its appearance before required local committees such as the Automation Guidance Council or MEDCARE Review Committee (or similarly named councils as may be required by local and established HSC procedures) for their consideration and recommendation to your commander regarding approval and priorities for acquisition using available sources of funding. Upon local approval of your proposal it will be forwarded to HSC and more than likely the Surgeon General's office for further approvals. Actual requisition of your hardware and any initial increment of software requires the commitment of local funds in most cases. It is recommended that as much software be included in the initial proposal as may be possible given funding limitations of the various acquisition programs because the purchase of additional software requires an approval process almost as cumbersome as the initial approval of the system.

The Proposal

The actual critical appendices from the CPASS proposal are presented in appendices C and D of this paper. They may be considered within the "public domain" and may be copied in part or as a whole with modifications--adapting them to your local circumstances. Since approval of these documents, the format of the Appendix C, HSC Supplement 1 to AR 18-1 has changed. The primary difference is that the new format for Appendix C

ESTABLISHING A MICROCOMPUTER SUPPORT SYSTEM FOR PSYCHOLOGICAL SERVICES

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ABSTRACT

This paper is designed to be a practical guide for obtaining microcomputer hardware and software for the support of clinical psychological assessment and other psychological services. Documents utilized in the development of the Clinical Psychology Assessment Support System (CPASS) at Silas Hays Army Community Hospital are used as a concrete example of a successful proposal. The CPASS system consists of several microcomputers currently supporting psychological services and the psychology internship program at Fort Ord. The emphasis of this paper is on the practical aspects of how to establish a microcomputer system within HSC. The heart of any successful proposal is the required appendices (C & D) under applicable HSC regulations. The actual appendices from the CPASS proposal, which were carefully coordinated to advanced copies of the content of HSC Regulation 40-3 "Use and Control of Psychological Test Materials", and legal research supporting this regulation are presented.

Introduction

In recent years the use of computer technology has increased seemingly geometrically in American business, education, and the professions. Presumably because of needs for standardization, control and order in this process, guidelines have been developed for the selection and purchase of computer systems within HSC and the Army as a whole covering a wide range of possible applications, including the use of microprocessors in support of psychological services. This paper represents an attempt to simplify the staff work necessary to enable an Army hospital, medical center or community mental health activity, clinical psychology service to apply for and acquire microcomputer and software support.

The Acquisition Process

Applicable regulations include AR 18-1, HSC Supplement 1 to AR

COMPUTER SUPPORT

by the therapists could have contributed substantially to Mrs. G's increased self-esteem, shift in locus of control, etc.

"Instrument decay", "practice effects", statistical regression, and/or response - shift bias may also have affected psychometric variables. These effects are caused by imperfect test - retest reliabilities of psychometric instruments, differences in the patient's approach to psychometric evaluation between pre- and post-testing, and/or other autonomous changes in the testing conditions.

In view of these potential confounds, the results of the present study should be viewed as tentative until confirmed or disconfirmed by more controlled studies.

Footnotes

The opinions or assertions contained in this paper are the private views of the authors and should not be considered as official or as reflecting the views of the Department of the Army or the Department of Defense.

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she was engaging in more church-related activities and was receiving the positive social reinforcement she desired. Although she still demonstrated a tendency to misperceive some events -- such as presuming that others were laughing at her --, she was able to deal with these thoughts in a more rational manner.

The shift in locus of control exhibited by Mrs. G. also appears to be of therapeutic significance. Rather than viewing her health as being controlled by health care professionals or fate, Mrs. G. began to recognize the degree of control she could exert over her disorder. In other words, rather than reacting to events, Mrs. G. began to "proact" and behave in such a way as to promote health.

Mrs. G's increased self-esteem may also have contributed to her reduction in seizure frequency. Rather than viewing herself as defective and somehow wicked, Mrs. G. began to see herself more realistically, as an individual with strengths and ordinary foibles. Although she demonstrated a decline in the number of positive self-descriptors endorsed, this was more than compensated for by the dramatic reduction in the number of unfavorable self-descriptors she chose.

The generalizeability of the results of the present study to groups of epileptics is unclear. While this case certainly provides anecdotal evidence as to the efficacy of stress management training in reducing seizure frequency, several sources of error may serve to confound the obtained results. First of all, reliance upon self-reports as a measure of seizures frequency is less than desirable. Such self-reports may be unreliable due to potential memory problems or due to unintentional biasing of such reports to please the therapist.

It is also possible that historical or maturational variables may have influenced the outcome. For example, it is possible that events unassociated with treatment may have had an impact upon Mrs. G's reduction in seizure frequency. Alternatively, because seizure frequency was not accurately assessed for an adequate length of time prior to beginning treatment, this case study may have fortuitously capitalized on random variation in seizure frequency or may represent observation of fluctuation in a much longer cycle of seizure activity. It is also possible that the observed effects represent a spontaneous remission of symptoms.

The therapeutic gains noted in this case may also be explained, in part or in whole, by the reactivity of behavioral measures. It has long been noted that the process of measurement may effect changes in that which is being measured. Thus, it may be that non-specific processes related to assessment and treatment may have been more beneficial to the patient than stress management training per se. Certainly, the acceptance and understanding demonstrated

Discussion

It appears clear that behavioral interventions can be used with great effectiveness as an adjunct to anticonvulsants. Reductions in seizure frequency and severity can be achieved in a relatively short period of time without the use of cumbersome and expensive electroencephalographic biofeedback equipment. Furthermore, as demonstrated in the present case, significant therapeutic gains can be achieved without radical restructuring of characterological faults. Moreover, therapeutic gains can be obtained even in cases of chronic, severe epilepsy.

The dramatic reduction in seizure frequency observed in this case lends anecdotal support to Javanovic's (1974) notion of a seizure threshold. Mrs. G's combined use of anticonvulsants and stress management techniques allowed her to maintain her endogenous and exogenous stressors at a level below her seizure threshold. When additional, uncontrolled stress was placed upon her, as during week 17 of follow-up when she became physically ill, her seizure threshold was exceeded and a flurry of seizures resulted.

It is not clear which components of stress management training contributed to the observed therapeutic gains. A strong case can be made for the utility of relaxation training in that almost all current forms of psychological interventions for seizure disorders (e.g., SMR biofeedback, desensitization) involve either a direct or indirect acquisition of a relaxation response. Indeed, many epileptics have found that relaxation during the prodromal phase of seizures can "paradoxically" be more effective in aborting seizures than struggling against seizure onset.

Mrs. G. did not demonstrate significant dietary or exercise modifications. Thus, it is unlikely that education regarding healthful life styles, in and of itself, contributed significantly to the observed therapeutic gains. It can, of course, be argued that compliance with this component of treatment might have enhanced the therapeutic effect. Additional systematic investigation is necessary before the proportion of variance in outcome attributable to life style modifications can be quantified.

In the present case, cognitive restructuring and assertion training appeared to be of considerable benefit in breaking the vicious cycles contributing to Mrs. G's stress. Instead of viewing increased seizures as an indication of her own wickedness, Mrs. G. was able to interpret her seizures as a challenge to be overcome in order to provide an inspiration for others afflicted with serious health problems. Socially, she was less suspicious and was able to approach others more appropriately. At last report,

During the course of treatment, Mrs. G. achieved a more realistic perception of responsibility for her health, i.e., a shift from external to internal locus of control was noted. Her self-image became more favorable, and her somatic complaints decreased in number. Although her level of trait anxiety (i.e., her chronic predisposition to respond to threatening situations with anxiety) remained constant, a decline in state anxiety (i.e., acute, situational anxiety) was noted. Mrs. G. also endorsed fewer psychopathological symptoms. In particular, gains were noted in the areas of obsessive-compulsive traits, interpersonal sensitivity, anxiety, phobic concerns, paranoid ideation, and psychoticism.

TABLE I
PSYCHOMETRIC ASSESSMENT: PRE- VERSUS POST-TREATMENT

Variable Assessed Instrument Employed	T-Score Pre-Treatment	T-Score Post-Treatment	T-Score Difference
1. Locus of Control: (Multidimensional Health Locus of Control)			
a. Internal Locus of Control	40	54	+14*
b. Powerful Others Locus of Control	60	52	- 8*
c. "Chance" Locus of Control	56	61	+ 5
2. Somatic Complaints: (Cornell Index)	72	63	- 9*
3. Self-Concept: (Adjective Check List)			
a. Favorable Self-Descriptors	47	37	-10
b. Unfavorable Self-Descriptors	65	14	-51*
4. Trait Anxiety: (State-Trait Anxiety Inventory)	68	69	+ 1
5. State Anxiety: (State-Trait Anxiety Inventory)	66	51	-15*
6. Psychiatric Symptomatology: (Symptom Check List-90-R)			
a. Somatization	51	56	+ 5
b. Obsessive-Compulsive	55	53	- 2*
c. Interpersonal Sensitivity	65	59	- 6*
d. Depression	50	55	+ 5
e. Anxiety	54	52	- 2*
f. Hostility	45	45	+ 0
g. Phobic Anxiety	58	48	-10*
h. Paranoid Ideation	64	57	- 7*
i. Psychoticism	59	53	- 6*
j. Mean Total Score	54	53	- 1*

* Changes in predicted or clinical direction

largely a consequence of her chronic neurological dysfunction and that a diagnosis of psychosis was unwarranted.

In regards to her perception of locus of control in health-related matters, Mrs. G. displayed a tendency to view health care professionals as largely responsible for her state of health. At the same time, she tended to minimize her own degree of responsibility for, or control over, her physical health. Mrs. G. appeared characteristically somewhat anxious and complained of a moderate degree of acute distress. She also displayed an inordinate number of somatic complaints. She tended to be self-critical, and her self-image was inappropriately low. Mrs. G. was interpersonally sensitive and admitted to some paranoid ideation.

PROCEDURE: Mrs. G. was provided with stress management group therapy consisting of: 1) instruction in relaxation techniques including muscle relaxation, self-hypnosis, and guided imagery, 2) education into the positive roles of diet and exercise, 3) instruction in cognitive restructuring techniques, and 4) assertion training. The group was unselected and represented a random sample of patients referred for stress management.

Psychometrics, obtained prior to and at the end of therapy, and self-reports of seizure frequency served as dependent measures. Follow-up self-reports of seizures frequency were obtained for a period of 32 weeks following treatment.

Results

During the course of treatment, Mrs. G. demonstrated an 84% reduction in seizure frequency, going from an average of 12 seizures per week to only two seizures the week following the end of treatment. With some minor fluctuation, this improvement was maintained during the 32 week course of follow-up with only one exception. During the 17th week of follow-up, Mrs. G. experienced 10 seizures. This rather anomalous increase in seizure activity was associated with a period of physical illness (urinary tract infection), and a return to the post-treatment seizure frequency was noted as the infection cleared.

These data do not reflect the qualitative changes in seizures reported by Mrs. G. Prior to treatment, Mrs. G. experienced an average of two grand mal seizures per week. Following treatment, she reported only two grand mal seizures during the entire 32 week follow-up period.

Table 1 documents pre-versus post-treatment changes in T - scores on 18 psychometric variables. As can be seen, changes in a therapeutic direction were obtained on 12 of these 18 measures. The probability that these results were obtained by chance is quite small ($p=.0708$), suggesting that mere statistical regression toward the mean is an unlikely explanation for this phenomenon.

The second vicious cycle stems from her approach to social interactions. Mrs. G. is embarrassed by her affliction, and the possibility of seizing in front of others causes her considerable psychosocial stress. As a consequence, her social overtures appear cautious, hesitant, and timid. Such overtures infrequently result in positive social reinforcement and lead Mrs. G. to become even more withdrawn and anxious. This social anxiety, and the stress it produces, probably contributes to more frequent seizures.

PSYCHOMETRIC EVALUATION: Mrs. G. is normally intelligent, and her Verbal skills are only mildly attenuated relative to her Performance skills. A review of her WAIS subtest scores reveals no statistically significant scatter. Only one subtest (Arithmetic) falls below normal limits.

Mrs. G's short-term recall of verbal and visual material is within normal limits and at a level commensurate with her intellectual abilities. However, a weakness is noted in her short-term recall of paragraph-length verbal material. Her intermediate memory functions are mildly attenuated with a modality-specific weakness noted in her intermediate recall of visually presented stimuli. Her long-term memory processes are within normal limits.

As was noted above, neuropsychological evaluation reveals mild generalized cerebral dysfunction which is greatest in the temporoparietal cortices bilaterally (Left greater than Right). Although her simple sensory processes are intact, bilateral tactile and auditory suppression errors are noted (Left greater than Right) upon bilateral simultaneous stimulation. Finger agnosia and dysgraphesthesia errors are noted primarily on her dominant (Right) hand. Although her phonemic discrimination abilities are intact, Mrs. G's verbal fluency is attenuated. Her ability to discriminate rhythmic sound patterns is weak. A weakness is also noted bilaterally in Mrs. G's fine motor skills. Her performance on more complex sensorimotor integration tasks is impaired.

During neuropsychological assessment, when confronted with a relatively difficult experimental measure, Mrs. G experienced a psychomotor seizure. She sat back abruptly in her chair, turned her head from side to side, and stared blankly. This was accompanied by bilateral rotation of her arms, moans, and cries of "help me!".

Personality screening suggested the presence of significant psychopathology, possibly of a paranoid schizophrenic nature. Indeed, material emerged during the clinical interview which tended to support such a diagnosis. For instance, Mrs. G. was suspicious that others were talking about, laughing at, or otherwise avoiding her because of her seizure disorder. She also recalled an episode, possibly an aura to a seizure, wherein she experienced an "evil force" or "the Devil". However, no disturbances of thought were noted that could not be attributed to the length and phenomenology of Mrs. G's seizure disorder. Thus, it was suspected that her anomalous MMPI profile was

Method

SUBJECT: Mrs. G. is a 50 year old, married, Caucasian female with a 35 year history of poorly controlled psychomotor and grand mal seizures. Her seizures began at age 15 following a closed head injury sustained during an automobile accident. Mrs. G's father apparently suffered an idiopathic epilepsy which was uncontrolled. She recalled, with sadness, the tribulations of her father, who was fired from several jobs because of his illness.

Mrs. G is in good physical health. She is compliant with her daily anticonvulsant regimen of phenytoin sodium (500 mg), carbamazepine (500 mg), and acetazolamide (200 mg). In spite of this, Mrs. G. experienced an average of 12 seizures per week. There were no changes in anticonvulsant medications during the course of the present study.

A neurodiagnostic work-up established a definite physiological basis for Mrs. G's epilepsy. Repeated EEGs revealed left temporal slowing. In addition, a previous CT-scan revealed a left posterior temporal encephalomalacia. Although no prodromal symptoms are currently observed, Mrs. G. reports that her seizures were previously preceded by an aura of rising epigastric distress. Behaviorally, Mrs. G's seizures are frequently accompanied by urinary incontinence. Moreover, she has frequently injured herself -- burns, lacerations, head injuries -- during seizures. A neuropsychological examination, performed in conjunction with psychological treatment, was consistent with previous neurodiagnostic findings, and indicated mild generalized cerebral dysfunction which was greatest in the temporoparietal cortices bilaterally (left greater than right).

Mrs. G. also has a long history of dyspareunia and attenuated libido, for which she previously received traditional psychotherapy. This previous psychological intervention failed, probably because the therapist failed to consider Mrs. G's neurological status [it is established (e.g., Shukla, Srivastava, and Katiyar, 1979) that many temporal lobe epileptics are hyposexual or experience sexual dysfunction].

It appears clear that Mrs. G's seizure frequency is related to her level of physical or perceived psychological stress. For instance, a review of her medical records revealed significant increases in seizure activity on several occasions when her husband was due to be transferred overseas. Similarly, Mrs. G's seizure activity increased during periods of physical illness.

Two vicious cycles appear to contribute to Mrs. G's level of stress. One results from her apparent hyperreligious orientation, which leads her to view her seizures as a burden placed upon her by God. Viewing increased seizures as an indication of her own sinfulness augments her anxiety and guilt, thereby increasing her level of stress and triggering more seizures.

<u>Quantity</u>	<u>Make & Model</u>	<u>Price for each item 3 systems</u>
3	Disc Drive - additional without controller	395.00
3	MMPI Report (570-CP) Software	149.00
3	Surge Suppressor	60.00
3	Epson FX 80 Printer	699.00

Total each system: \$2,998.00

Since the above equipment cost is less than \$3,000. the equipment request (Appendix D) will be sent to the MEDDAC Commander for his consideration upon HSC approval of this document.

c. Location of Hardware:

- (1). Clinical Psychology Service, Building T-3014, Main Post, Fort Ord.
- (2). Community Mental Health Activity (CMHA), Building 2990, Main Post, Fort Ord.
- (3). Hospital Section, Clinical Psychology Service, 7th Floor, Silas B. Hays Army Community Hospital, Fort Ord.

d. Language: BASIC

e. System Description:

- (1). Function: To provide automated psychological assessment testing/evaluation scoring and interpretation for patient care purposes in the Department of Psychiatry, Clinical Psychology Service, Silas B. Hays Army Community Hospital, and the Community Mental Health Activity, Clinical Psychology Section, MEDDAC.
- (2). Objective: To increase the availability of psychological services while reducing the manhours required to score and interpret psychological tests, instruments and other data in support of psychodiagnostic and treatment services. To provide for increased effectiveness of assigned personnel. To provide easy appropriate storage and rapid

accessibility of assessment results. To reduce manhours required to provide needed services which are presently or should presently be provided in support of Army agencies such as the Alcohol and Drug Abuse Prevention and Control Program and Fort Ord Correctional Confinement Facility (stockade).

(3). Scope of Operations: System should provide automated timely generation of test/evaluation scores. Within minutes of input basic scales should be scored/interpreted with output reflecting narrative, critical items, profiles and interpretation as appropriate for consideration of the professional staff.

C-6 Background: Currently a large volume of psychological evaluations requiring psychological testing is managed by the Clinical Psychology Service in the Clinical Psychology Service Building (T-3014) and within the Silas B. Hays Army Community Hospital building/wards as well as at the Community Mental Health Activity, Clinical Psychology Section, located in building T-2990, Fort Ord. The physical locations and patient populations served at each of these MEDDAC activities differ markedly in terms of the nature of the populations served and their needs.

- a. The Clinical Psychology Service serves a largely dependent (family member) population including a unique emphasis on children and family needs at its facility located about three miles from the main Silas B. Hays Army Community Hospital facility. Testing/evaluation needs at this facility reflect a family member/child psychology emphasis. Also, the majority of the APA Approved Psychology Internship Program located at SBHACH is taught at this location. Support is provided to the ADAPCP and stockade from this base of operations.
- b. Clinical Psychology Services delivered at the Silas B. Hays Army Community Hospital building support inpatient and outpatient psychiatric services, and the needs of hospital departments such as the Departments of Medicine, Family Practice, Surgery, and the Department of Primary Care/Community Medicine. There is a distinct focus on inpatient consultations at this activity center in addition to consultative and psychological services in support of out patient functions.

- c. The Community Mental Health Activity, Psychology Section, serves a primarily active duty population for clinical services and serves Commanders for consultation purposes. It is located in a facility separate from those noted in C-6 a and b above, and supports distinctly differing primary missions and populations.

C-7 Assumptions/Restrictions:

a. Assumptions:

(1). The majority of psychological-specific software is available for Apple IIe or similar Apple configurations. While any microprocessor might be conceivably used, compatibility with available software is a consideration which strongly suggests the use of the Apple system would be an advantage to the government. Systems currently functioning successfully at Walter Reed Army Medical Center, Fitzsimmons Army Medical Center and proposed for Madigan Army Medical Center are all configured with Apple hardware. The likelihood newly assigned users would be familiar with the idiosyncracies of the local system would be enhanced by our obtaining similar equipment.

(2). The systems will begin with MMPI Report (570-CP) software in order to initiate the system and to become more familiar with the use of on-line computer technology. As the system becomes increasingly familiar other software packages will be obtained using OMA funds and/or will be produced locally.

b. Restrictions:

(1). The use of psychological tests/instruments in assessment/psychodiagnostic activities has been addressed in numerous state, federal, and Supreme Court decisions in recent years. Issues which have been brought to the courts have included: The Education of the Handicapped Act (PL 94-142), The Rehabilitation Act, alleged violations of the Constitution, The Civil Rights Act, The Sherman Act, and The Social

Security Act, to mention a few. The manner and conditions of control and confidentiality of psychological test program results and of psychological test security maintenance by psychologists also have been reviewed in court decisions. Provisions for the delivery of psychological services are made in HSC Regulation 10-1 and local supplements. Other regulations provide for the maintenance of psychological records, test data, and for patient administration, such as AR 40-400.

(2). Judgments of the courts have been based on whether psychological instruments, tests, or procedures had been employed in a manner acceptable to current professional practice. The legality or acceptability of use of tests, instruments, or procedures appears to have hinged on conformity to both the Standards for Educational and Psychological Tests and the "Ethical Principles of Psychologists," which are published by the American Psychological Association.

(3). In view of the necessity for conformance to appropriate professional standards it is essential that only appropriately credentialed psychologists act as custodians of the CPASS system. Further, no production of the system may be considered applicable to a particular patient without the written signature or authentication of an appropriately credentialed psychologist. HSC Regulation 10-1 does not provide for the delivery of psychological services in any service/section other than within the structure of an appropriately constituted Clinical Psychology Service. If no appropriately credentialed psychologist is present to authenticate results, the CPASS system will not be permitted to be utilized for its purpose as stated.

(4). A categorized listing of federal and Supreme Court cases involving psychological techniques, tests, and instruments follows. The opinions, annotations or assertions implied in/by this listing as contained herein are the private views of the POC for this project, LTC Shoberg, and the current HSC Psychology Consultant, and are not to be construed as official or as necessarily reflecting the views of the Staff Judge Advocate, the Department of the Army or the Department of Defense.

1. CONSTITUTIONAL

- a. Insanity: (Psychological Procedures in Mental Disorder and Mental Capacity/Responsibility Determinations)

Jenkins v U.S., 307 F. 2d 637 (D.C. Cir. 1962 en banc); 117 U.S. App. D.C. 346 (1962) rehearing; 330 F. 2d 222 (1962).

- b. Equal Protection:

Washington v Davis, 96 S Ct. 2040 (1976).

- c. Functional Literacy:

Debra P. v Turlington, 474 F. Supp. 244 (M.D. Fla. 1979); 644 F. 2d 397 (5th Cir. 1981).

- d. Inadequate Prison Health Care:

Ruiz v Estelle, 503 F. Supp. 1265 (S.D. Tex. 1980).

- e. False Arrest:

Smiddy v Varney, 652 F. 2d 866 (9th Cir. 1981); 665 F. 2d 261 (9th Cir. 1981).

2. CIVIL RIGHTS/EQUAL EMPLOYMENT OPPORTUNITY (Employment Discrimination - Selection, Hiring, Promotion)

- a. Racial:

(1) Douglas v Hampton, 512 F. 2d 976 (D.C. Cir 1975).

(2) Firefighters Institute, Etc. v City of St. Louis, 549 F. 2d 506 (8th Cir. 1977).

(3) U.S. v City of Chicago, 573 F. 2d 416 (7th Cir. 1978).

(4) Dickerson v U.S. Steel Corp., 472 F. Supp. 1304 (E.D. Penn. 1978).

(5) Guardians Association of New York City v Civil Service, 630 F. 2d 79 (2nd Cir. 1980).

(6) Corley v City of Jacksonville, 506 F. Supp. 528 (M.D. Fla. 1981).

(7) Contreras v City of Los Angeles, 656 F. 2d 1267 (9th Cir. 1981).

- b. Racial and Sex:

(1) U.S. v City of Buffalo, 457 F. Supp. 612 (W.D. N.Y. 1978).

(2) Vanguard Justice Society, Inc. v Hughes, 471 F. Supp. 670 (D. Md. 1979).

(3) Pegues v Miss. State Employment Service, Etc., 488 F. Supp. 239 (N.D. Miss. 1980).

c. Sex:

- (1) U.S. v Com. of Virginia, 454 F. Supp. 1077 (E.D. Va. 1978).
- (2) Berkman v City of New York, 536 F. Supp. 177 (E.D. N.Y. 1982).

3. EDUCATION OF THE HANDICAPPED ACT:

a. Schools - Handicapped Children:

- (1) Campbell v Talladega County Board of Education, 518 F. Supp. 47
(N.D. Ala. 1981).
- (2) Gladys J. v Pearland Independent School District, 520 F. Supp. 869
(S.D. Tex. 1981).
- (3) Stacey G., Etc. v Pasadena Independent School District, 547 F. Supp. 61
(S.D. Tex. 1982).

b. School - Discrimination in Special Education:

- (1) Larry P. v Riles, 495 F. Supp. 926 (N.D. Calif. 1979).
- (2) Parents in Action on Special Education (PASE) v Hannon, 506 F. Supp. 831
(N.D. Ill. 1980).
- (3) Papacoda v State of Connecticut, 528 F. Supp 68 (D. Conn. 1981).

4. REHABILITATION ACT

Anderson v Banks, 520 F. Supp 472 (S.D. Ga. 1981).

5. SHERMAN ANTITRUST ACT (Psychologists' Independent Application of Psychological Evaluation Techniques)

Virginia Academy, Etc. v Blue Shield of Virginia, 469 F. Supp. 552 (E.D. Va 1979); 501 F. Supp. 1232
(E.D. Va. 1980).

6. SOCIAL SECURITY ACT (Disability Impairment Definition)

- a. Paskowski v Finch, 316 F. Supp. 1050 (W.D. Penn. 1970)
- b. Neumerski v Califano, 513 F. Supp. 1011 (E.D. Penn. 1981)

7. LABOR RELATIONS (Security and Control of Psychological Test Program and Results)

Detroit Edison Co. v National Labor Relations Board, 560 F. 2d 722 (6th Cir. 1978), vac, 99 S. Ct. 1123 (1979).

C-8 Security Requirements: Privacy Act Data. Medically Sensitive Data.

C-9 Similar or Identical Systems: Software packages are available for MMPI scoring and reports, WISC-R reports, Rorschach ratios and scores, Sbordone/Hall Memory Batteries, Digit-Digit Tests, Cognitive Rehabilitation Procedures and many other functions, instruments, and tests. Vendors such as Psychological Assessment Resources, Inc. and Precision People, Inc. are constantly increasing software availability.

C-10 System Interface: None

C-11 Statutory and Other Regulatory Requirements:

- a. See C-6, b, Restrictions above and C-7, b (4) (....a categorical listing of federal and Supreme Court cases....).
- b. The customary requirements of DOD, DA and HSC Standards.

C-12 Workload Data:

- a. Input: Psychological test responses, test data, cognitive training responses and basic identifying demographic data.
- b. Output: Test score raw data, T-scores, test profiles, summary data, interpretive statements, report summaries.

c. Data: Reference basic system documentation of appropriate software selected.

d. Estimated man months: System implementation will require more. Setup time will be provided by the vendor. Preventive maintenance will be obtained thru the vendor of the system and in accordance with local logistical support SOP. Routine non-technical operations will be performed by user whenever reasonable and within the scope of applicable MEDDAC SOP or policy.

C-13 Desired Operational Date: 15 December 1983.

C-14 Priority: The CPASS is the number one short-term priority for the Clinical Psychology Service and Department of Psychiatry.

C-15 Cost Tangible or Intangible Benefit: The automation of services as stated above will result in tangible increases in the availability of quality psychological services to the SBHACH and MEDDAC catchment populations. For example, at present only limited psychological assessment support is available to the ADAPCP and for psychiatric and other inpatients. Specifically the (CPASS) system should provide for the opportunity to better support the assessment of up to 200 newly referred clinics to the local Alcohol and Drug Abuse Prevention and Control Program (ADAPCP). This program has no organic psychological support provided for on its TDA at present. Thus, they must rely on the support of the Department of Psychiatry and Clinical Psychology Service for psychological consultation and support of their assessment and service delivery needs. The CPASS system would support approximately 50 psychological assessments monthly at the CMHA; and, 30 to 60 assessments per month accomplished by the Department of Psychiatry, Clinical Psychology Service. This system will enhance the effectiveness of present staff by saving approximately 50% of staff costs per each psychological test the system scores and/or interprets and will enable presently existing staff to increase productivity accordingly by accomplishment of routine repetitive tasks more efficiently. It is conservatively estimated that approximately 15% of the time of the psychology officers and civilians assigned is presently devoted to tasks which the CPASS system would support. There

are four psychology interns and five full time psychologists assigned to the activities which would manage the three proposed microcomputers of the CPASS system. Assuming the average salary of those officers concerned to be \$30,000 and that the CPASS system would save 50% of costs for the 15% of their time devoted to routine assessment tasks the CPASS system would save approximately \$20,250.00 in its first year of operation. Resources thus saved could be devoted to patient care activities not presently being accomplished or to increase the availability of assessment services.

C-16 Statement of impact if system is not approved: Clinical Psychology Service would continue to be supported by manual systems presently utilized. In particular, services to the ADAPCP program perceived as needed by the ADAPCP clinical consultant would not be accomplished without augmentation of capability as requested. And, more broadly, those services delivered would in many cases be less timely than advisable and thus patient care would be less efficiently delivered by all MEDDAC departments, services, and activities supported. The untimeliness and lack of quantity of needed services would thus continue to negatively impact on fulfillment of the MEDDAC mission.

C-17 Point of Contact: (AMO), Mr. George W. Chesleigh, DAC, Chief, System and Programming Branch, Autovon 929-6335; LOC (408) 242-6335.

C-18 Telecommunications requirements: None.

APPENDIX D

Section I. Identification

- Assigned Responsible Agency: See Appendix C.
- DPA Code: See Appendix C.
- Functional Point of Contact: ADP point of contact. POC: LTC John D. Shoberg, MSC, Director of Intern Training and Assistant Chief, Clinical Psychology Service. Autovon 929-2678/7591; LOC (408) 242-2678/7591.

Section II. Specified ADPE Requested

Description of Requested Specified ADPE:

a. System(s)

<u>Quantity</u>	<u>Make & Model</u>	<u>Price for each item 3 systems</u>
3	Apple IIe Computer 64K Memory with Applesoft Basic	
3	Disc Drive with Controller	
3	80 Column Card	\$1,695.00 per package
3	Apple Monitor III	
3	Monitor Stand	
3	Disc Drive - additional without Controller	395.00
3	MMPI Report (570-CP) Software	149.00
3	Surge Suppressor	60.00
3	Epson FX 80 Printer	699.00
Total each system:		\$2,998.00

b. Materials available from local dealers.

c. ADPE to be released: None.

5 Equipment Selection Evaluation:

a. The above requested equipment is needed to provide the Clinical Psychology Service, Department of Psychiatry (subsections individually located at both SBHACH main building and the Clinical Psychology building, one each) and the Clinical Psychology Section, Community Mental Health Activity, SBHACH (one each) the use of software packages already written for the Apple Computer for automated psychological testing, scoring and interpretive assistance to assessments (e.g. MMPI, with report, Rorschach Scoring, Sbordone/Hall Memory Battery, Digit-Digit Test, WISC-R interpretation, etc.). (See Appendix C.) This software is available thru normal acquisition channels and is designed specifically for the above ADPE. The Epson FX 80 printer is chosen for its low cost and reputation for reliability, and is known to be compatible to all of the software noted. The two disc drives are necessary for comprehensive use of the software packages, to make back-up copies of software and data, and to ensure continuous operation in the case where one disc drive becomes disabled.

b. The use of the CPASS systems and its ADPE is required for the following reasons:

(1) The missions of the Clinical Psychology Service, Department of Psychiatry and the Clinical Psychology Section, Community Mental Health Activity, require large numbers of extensive psychological assessments. For example, some clinical instruments such as the MMPI might be considered essential to nearly every assessment accomplished. The present manual system of scoring and interpreting the MMPI by hand requires many manhours doing a task which could be more effectively accomplished by the CPASS systems. The automation of some of the frequently used psychological tests would reduce the heavy work demands on existing personnel and allow further services to be delivered. It follows that more efficient utilization of personnel would result.

(2) The requested ADPE and the automation of psychological testing was commercially designed and has been available in Clinical Psychology Services at other Army facilities (e.g. Walter Reed, Fitzsimmons) for

several years. It has proven to be cost effective and efficient resulting in improved utilization of the staff and increased availability of services.

(3) Scoring of psychological tests has been done manually by Clinical Psychology Service staff members. A recent survey of time required for administration, scoring, interpretation and report writing of the MMPI by LTC Tim Jefferies suggests that each MMPI requires on the average 60 minutes to process not counting secretarial typing time (administrative explanation to patient- 10 minutes, scoring of basic scales- 20 minutes, interpretation and write-up- 30 minutes). The CPASS system would enable each utilizing activity to score the basic scales along with additional scales, perform critical-items analysis, produce a graphic profile and an interpretation in writing in considerably less time. Also, a majority of clinicians feel that fewer errors result from use of an automated system as described.

1. Characteristics of the designated items that enables the system to satisfy the specific needs: Software is readily available having widespread clinical acceptance. Also, adaptation to reflect local norms and recently gathered Army wide normative data is possible. Two staff members at this installation have experience in program/software design for automated psychological testing systems; thus enabling the staff to upgrade or produce software uniquely suited to needs at this installation.

1. No other systems were considered due to software requirements/availability.

2. Availability of GO excess ADPE to satisfy requirements: None.

Funding for ADPE: Capital Expense Equipment Fund money has been reserved for these purchases.

1. Recommendation as to lease or purchase: Capital Expense Funds are "purchase only" money.

2. AAMAP or AACOB cross reference: None.

3. MEDCASE ID number: Not applicable.

Section III. Systems Information

Current requirements:

- a. While almost any ADPE equipment could conceivably be adapted, the current requirements and easy availability of software to match the requested systems make it impractical to adopt other options. Since the majority of psychological software for microcomputers is available for the Apple system, other alternatives to those requested are considered essentially impractical. Also, the present manual mode of provision of services does not allow for the large scale needed psychological support the Clinical Psychology missions require. See Appendix C attached.
- b. Deficiencies or disadvantages of current method of processing data:
See Appendix C attached.

ADP resources sharing: Sharing of software available from some government agencies such as the Veterans Administration is possible. However, sharing of hardware is not feasible nor cost justifiable.

Costs:

- a. One-time costs: Three boxes of diskettes at \$40.00 each, three grapplers and interface equipment at \$125.00 each, and ten printer cartridges at \$8.00 each. \$2,999 maximum total purchase cost.
- b. Recurring costs: Data Processing Division SBHACH will supply printer ribbons and paper.
- c. Training needed is included in the one-time purchase cost.

Personnel costs: No additional manpower is required to operate desired equipment.

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